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SLEEPING SOUNDLY?

(Sleep and the low dependency hospital patient)

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Submitted for the degree of M.Sc. (Med. Sci.)

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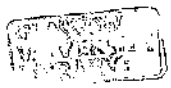

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SUMMARY

The research was undertaken following the award of a Scottish Home and Health Department Nursing Research Training Fellowship (1981-1983).

The purpose of the study was to explore the nature of interactions that night nurses have with low dependency patients - particularly those patients who are experiencing difficulty in obtaining what for them is a normal night's sleep.

The study was based on the assumption that the amount of contact patients have with nurses is largely dependent on patients' level of dependency on nursing staff for direct care; patients who are capable of a high degree of self-care - but who may nevertheless experience problems in relation to sleep during hospitalization - may not receive the nursing care appropriate to assisting them overcome such problems and thereby obtain sufficient sleep to satisfy their individual requirements.

Fifty low dependency medical in-patients were interviewed to obtain details of their usual (at home) sleep patterns, and subsequently interviewed again on three consecutive mornings regarding their previous

night's sleep in hospital. Over three quarters of the sample showed an overall sleep deficit when the total amount of sleep obtained in hospital over the three nights of their inclusion in the study was compared with the amount each would normally have expected to have obtained at home over the same period.

During the same three nights to which the interviews pertained, observation of these patients' waking and sleeping patterns in conjunction with the nurse-patient interactions that occurred provided an insight into the nature of interactions that night nurses have with low dependency patients. It also facilitated measurement of the length of time any of these patients were awake during the night without any interactions taking place. Many patients who experienced initial difficulty in getting to sleep and/or wakened during the night and found it difficult to get back to sleep again had no verbal contact with the nurses. Interactions that did occur were mainly task-orientated and relatively brief.

1. INTRODUCTION

Sleep is a complex activity and one of our basic physiological needs. However, sleep is sensitive to change, and many factors may disturb sleep. Much of the research into the sleep of hospital patients has been in the form of surveys which have provided some evidence to suggest that normal sleep patterns are interrupted during hospitalization (1, 2,3,4).

Invariably, sleep patterns will influence the nursing needs of patients at night, and an integral part of nursing care involves interacting with patients. Previous research has also provided an insight into the pattern and nature of nurse-patient interactions which suggests that both during the day and at night such interaction is largely task-initiated, conversation mainly task-orientated, and patient-dependency the only significant factor influencing the pattern of these interactions (1,5). It has also been suggested that patients are reluctant to seek nursing attention other than for specific physical needs (1,6).

The present study found that while the majority of

patients regarded adequate sleep as being important for both physical and mental functioning, inability to sleep at night was not regarded as a justifiable reason for calling for nursing attention. On many occasions when patients wakened during the night the nurses either failed to recognize their wakeful state or, having recognized that patients were awake, chose not to intervene. Thus, because of patients' reluctance to call for nursing attention and the lack of spontaneous initiation of interactions with wakeful patients by nurses, no nurse-patient interactions occurred during the course of many of the periods of wakefulness that patients experienced during the night.

The subject of sleep and patients' difficulties regarding this featured in relatively few interactions and in many of the instances when it did the problems patients were experiencing or had experienced in relation to obtaining what for them was regarded as adequate sleep, were not pursued.

2. REVIEW OF LITERATURE

2.1 Introduction

Whilst research continues into its precise nature and purpose, it is generally acknowledged that sleep is an integral part of the rhythm of our daily lives and is a physiological need. Kleitman (7) briefly defines sleep as 'a periodic temporary cessation or interruption of the waking state', while Oswald (8) regards it as a state of inertia and unresponsiveness. Hartmann (9) defines sleep as 'a recurrent, easily reversible condition characterized by relative quiescence and by a greatly increased threshold for response to external stimulation'. All descriptions of sleep agree that one necessary criterion is its reversibility - that is, a person can be roused from sleep. Rather than attempt to define sleep, it is more useful to begin by briefly reviewing the current state of knowledge of this process.

2.2 The nature of sleep

The application of the electroencephalogram (E.E.G.) to the study of sleep in the early 1950's revealed that sleep consists of two distinct states which

alternate in cyclic fashion (7). Each sleep cycle - which lasts for between seventy and ninety minutes - is repeated four to six times per night depending on the total sleep time, and consists of an orthodox sleep phase of four stages and a phase of paradoxical sleep (10) (Appendix I).

2.3 The functions of sleep

The discovery of two distinct biological states of sleep has led researchers to suggest that sleep may have two separable but related functions. In general, sleep researchers appear to agree that sleep has a restorative function, with orthodox sleep (especially stages three and four) being necessary for basic biological processes such as tissue repair, recovery from fatigue, and growth (7,8,9). Supportive evidence for the restorative theory has come from the discovery of changes in the levels of circulating hormones during sleep. Protein destruction is thought to be reduced due to lowered levels of corticosteroids, while an increase in the secretion of growth hormone - which stimulates protein synthesis - has been shown to be sleep-dependent (11). Oswald, a strong supporter of the restorative theory, assert that the unresponsiveness and inertia of sleep is associated with a low rate of oxygen consumption because of a low rate of cellular work and that this in turn requires

less degradation, thus allowing more net protein synthesis (11).

Whilst the role of paradoxical sleep is as yet unclear, it has been linked with synthetic and restorative functions in the brain (9), and the psychological importance of dreams (which are associated with this phase of the sleep cycle) has been demonstrated in dream-curtailment experiments (12,13).

Following a detailed review of the literature, Hartmann (9) has compiled a useful summary of the functions of sleep (Appendix II).

2.4 The need for sleep

Deprived of sleep for four or five days young animals have been observed to die (7), but attempts to demonstrate the need for sleep in studies of humans where healthy adult volunteers have been partially or totally deprived of sleep for varying lengths of time have so far failed to provide conclusive evidence of chemico-physiological changes (8,9). On a more subjective level, sleep-deprived subjects have been observed to become increasingly irritable, unfocussed and anti-social, their thinking becomes irrational and sensory perception distorted (8,9).

2.5 Sleep requirements

How much sleep is required to optimize functioning

has not been clearly defined. The long-held and widely accepted assumption that adults require at least eight hours of sleep per night has, according to Pai (14), no valid physiological basis. Sleep requirements of individuals vary widely and it would appear, as Dement (15) maintains, that for each individual there is an optimum amount of sleep.

Hartmann (16) considers the general concept of a 'sleep requirement' to be a valid one in that subjectively people do have the impression of requiring sleep. He is of the opinion that adequate sleep supplies the subjective feeling of being rested and helps to optimize both physical and mental functioning. The subjective feeling state (or the feeling of whether or not one has had a 'good' sleep) is claimed by Hartmann to be dependent not only on the length of time an individual sleeps, but also on the number of times he wakens during the night. Questionnaire and interview studies by Hartmann (9) have led to the suggestion that sleep requirements are reduced when a person is doing and feeling well, and that they are increased in times associated with stress. Illness was almost always found to be associated with increased sleep need when it was not accompanied by difficulty in getting to sleep.

2.6 Neurophysiology of sleep

Neurophysiologists interested in the brain mechanisms responsible for sleep gradually realised that the reticular formation was important for the maintenance of the waking state (17). The model of activity which has developed is that wakefulness and alertness are maintained by the steady activity of the reticular formation neurons sending inputs to the thalamus and cerebral cortex.

The structure important for the occurrence of sleep appears to be the raphe - a complex of nuclei running through the core of the brain stem from the medulla to the posterior of the midbrain. Within the raphe are structures that counteract the reticular formation and, by their braking action, cause sleep. The nuclei of the raphe are rich in cells that contain the neurotransmitter serotonin. The sleep-waking cycle is thought to occur because of the secretion of serotonin: when serotonin levels are high enough the activity of the reticular formation is inhibited. However, as chronic interference with serotonin synthesis does not permanently disrupt sleep, other kinds of raphe neurons are also thought to be involved (18).

Additionally, an area in the pons (the locus coeruleus)

harbours the system responsible for the appearance of paradoxical sleep, the neurotransmitter in this instance being noradrenaline. In cyclic fashion these two systems apply brakes to the reticular formation responsible for wakefulness, and also influence all the other nerve systems in the brain, notably those involved in dreaming (18).

Other diurnal biochemical and hormonal changes within the internal environment which become associated by conditioning with sleep-preparatory behaviour are also thought to contribute towards the reduction of reticular formation stimulation (19). One of the most recent chemical discoveries pertaining to sleep and brain chemistry was that of a possible sleep-inducing peptide of nine amino acids present in the brain. It is called 'delta sleep-inducing peptide', but as yet its exact role is not known (20).

The periodic inhibition of reticular formation activity can be over-ridden by input from afferent pathways: axons running from sensory organs to the cerebral cortex put out branching axons or collaterals to the reticular formation (19). Hence sensory information which is transmitted to the cerebral cortex also triggers activity in the reticular formation.

This implies that any type of sensory signal can immediately activate the arousal system. For example, proprioceptive signals from the muscles, pain impulses from the skin, and auditory signals from the ears. In addition, stimulation from the cerebral cortex itself can activate the reticular formation. Disturbance of sleep onset is thought by Zung (21) to be an inability of the normal sleep mechanisms to inhibit sufficiently a hyperactive waking system that is being bombarded primarily by cortical excitatory impulses. Thus, a person in a state of anxiety is unable to fall asleep at his usual bedtime as a result of continued psychic activity. Schneider (22) considers anxiety to be one of the most important factors affecting sleep, and that the reduction in sleep is, in turn, stressful during the waking state.

2.7 Sleep and the hospital patient

As illness and hospitalization are experiences which are likely to be stressful and as sleep needs are increased during illness (9), it is important that nurses should try to ensure that conditions conducive to sleep are created in order to assist their patients obtain sleep sufficient to fulfil their individual requirements and thus avoid the additional stresses that have been shown to be associated with sleep loss (9).

Despite this, relatively few studies have specifically investigated patient care at night. Some insight into patients' experiences of night-time in hospital has been provided by surveys which have investigated many aspects of hospital care, including sleep (23,24), and studies which have compared patients' sleep patterns in hospital with their reported prior sleep patterns (1,4). These studies have exposed patients' dissatisfaction with night-time in hospital and appear to indicate that many patients are unable to obtain adequate sleep.

Patients have complained that there is too little time available for sleep in hospital - a situation which, to a large extent, has been attributed to early morning waking. Cartwright (23) interviewed 739 ex-patients, and of these 35% maintained that they had been wakened before 5.30 a.m., and 95% by 6.30 a.m. The Royal Commission on the National Health Service (24) found that 40% of the 797 ex-patients questioned had been wakened by 6.00 a.m. and 75% by 6.30 a.m. Although these percentages were not compared with the individuals' normal waking habits 44% of those interviewed by Cartwright (23) said they felt the time of waking in hospital was too early. Similarly, of those questioned by the Royal Commission nearly half complained that the time of waking had been too early (24).

However, both of these surveys were carried out after the respondents had been discharged from hospital and it is possible that the time-interval between the experience of hospitalization and the enquiry may have affected the accuracy of recall. In addition, the nature of the investigations was such that it is not known whether any of the patients who felt that they had been wakened too early were wakened of necessity. The early rousing in some instances may have been unavoidable if essential treatment had to be administered, although it is arguable that with careful planning such early disturbance could be avoided in many instances. If one adopts the view that 'nursing routine' determines the time that patients need to be wakened, it should arguably be possible for those patients who are not due any prescribed treatment or nursing care at this time to be allowed to sleep on.

In a study of hospital patients' sleep patterns (which was part of a larger study that also investigated how nurses spend their time on night duty), Dodds (1) attempted to overcome the problem of accuracy of recall by interviewing 100 general in-patients about a previous night's sleep. Of those interviewed, 61% said they found it difficult in hospital to obtain what was for them a normal amount of sleep. Hospital sleep patterns were also compared with patients' home sleep patterns

and it was found that at home - given the opportunity - 71% preferred to sleep on beyond 7.00 a.m., yet in hospital 90% had wakened or had been wakened before this time. When at home, 70% of the patients usually slept for at least six hours, but in hospital 52% said they had slept for less than six hours. However, for each patient only one hospital night formed the basis for comparison and it is possible that these findings do not accurately reflect patterns of sleep in hospital. More reliable results might have been obtained by investigating hospital sleep patterns over a period of several nights.

It has sometimes been suggested that patients who feel that they have not had sufficient sleep at night could make up for this by sleeping during the day, but a number of those interviewed by Dodds (1) said that they avoided doing so in the hope that they would subsequently sleep better at night. Patients have also been said to have found little time to sleep during the day because of the various ward activities which took place (25).

2.8 The environment and sleep

Disturbance of sleep as a result of noise has been cited as contributing to hospital patients' inability to obtain adequate sleep, patients in larger open wards

reporting greater sleep disturbance than those in smaller (for example, four-bedded) wards (24) or single cubicles (26).

Wilson-Barnett (26) investigated hospital patients' feelings and opinions and found that despite night sedation over one-third of the nights spent in hospital by the 202 patients she interviewed were said to be disturbed. (It was acknowledged that this may not mean that they lost a great deal of sleep, but many of the patients felt that they were not rested). Noise from other patients was blamed most frequently, but the proximity of the patient's bed to either the sluice or kitchen was found to be a close second, the constant traffic to and from these areas preventing undisturbed sleep.

A study carried out in a respiratory intensive care unit by Hilton (2) investigated the quality and quantity of patients' sleep and sought to identify sleep-disturbing factors. Patients' electro-encephalograms were recorded over a period of forty eight hours and later, when they had been transferred from the intensive care unit the patients were interviewed to obtain information about their sleep patterns prior to admission to hospital, and also to obtain their subjective assessments of their sleep while in the intensive care unit. The investigation

which, in the long term aimed to produce care more conducive to sleep and rest, revealed that patients' sleep was disturbed by environmental and staff noise, an inverse relationship existing between the number of sleep-disturbing factors occurring and the quantity of sleep obtained.

A questionnaire study (3) of the sleep patterns of patients admitted for elective surgery showed patients to have a reduced mean duration of sleep both before and after surgery over ten days of study. This was found to be due to delay in getting to sleep, early morning waking, and decreased quality of sleep, the latter being attributed to increased awakenings during the night as a result of noise and, on the first three post-operative nights, pain.

Of the patients interviewed by Dodds (1) 78% said they had wakened at least once during the night in question, and of these 34% attributed the cause of waking to environmental factors - noise from other patients, equipment, and nursing staff walking, talking and carrying out nursing tasks. These same factors were found to have prevented many patients from returning to sleep, and nurses chatting amongst themselves was reported to have been a source of irritation for a number of these individuals.

None of the investigations which revealed that patients' sleep is frequently interrupted by noise explored the nature of the nursing care which may have been received by those patients whose sleep was disturbed and which may have assisted them to get back to sleep subsequently. The Royal Commission on the National Health Service (24) reported that for over half of the 27% of those questioned whose sleep was disturbed the disturbance was sufficient to make it difficult for them to get a 'fair night's sleep'. The Commission suggested that there was little that could be done to improve the situation as much of the disturbance was caused by other patients who were snoring, restless, or in pain.

A number of patients may resort to using sleeping tablets while in hospital in the hope that this will enable them to sleep more soundly and thus be less disturbed by noise. Indeed, in an attempt to discover the reasons why patients take sleeping tablets in hospital, a questionnaire study by Bailey (4) found the single most important factor influencing patients' decisions regarding their use was noise. Most hypnotics produce a marked decrease in paradoxical sleep with a rebound increase in this type of sleep following drug withdrawal (27), and this may be accompanied by unpleasant dreams, nightmares, anxiety and fatigue - (thought by some to be a major factor in this type of

drug dependency) (28). It is therefore arguable that such drugs should only be given to aid sleep when other measures fail.

Bryan (29) has found that noise sensitivity correlates significantly with some personality traits, and he suggests that personality is probably more important in determining annoyance than noise exposure itself. This implies that irrespective of attempts to make the ward environment quiet, some patients will still be affected by even the slightest noise. Whilst it is acknowledged that some noise may be unavoidable and that patients' sensitivity to noise may vary, it is at least arguable that patients whose sleep has been disturbed and who are experiencing difficulty in returning to sleep may benefit from some form of nursing intervention (other than simply administering sleeping tablets) - for example, straightening or changing of bed linen, ensuring lights are dimmed or those not needed are switched off, talking to the patient to try and find out why he is not sleeping. This aspect of patient care does not appear to have been the focus of previous research.

2.9 Pain and sleep

Pain has already been cited as a sleep-disturbing factor in the case of post-operative patients (3).

In addition, there are other groups of patients who may be particularly susceptible to pain at night. As there is a marked increase in gastric acid secretion during paradoxical sleep (30) patients with duodenal ulceration may waken with pain in the latter part of the night. Nocturnal angina in patients with coronary artery disease is also associated with this phase of the sleep cycle. Because there are usually fewer distracting stimuli at night, pain may be perceived as being worse than it actually is. Whilst the administration of prescribed pain-relieving medication will probably help a patient who has wakened with pain, spending a little time talking to the patient may help to reduce any associated anxiety thus making his return to sleep less difficult. The nature of any such interactions between nurses and patients has not been investigated.

2.10 Anxiety and sleep

Anxious individuals may take longer than usual to get to sleep (21), and are also likely to waken more often and to remain awake longer during the night (31). Watts (32) and Pai (14) regard much insomnia as being due to anxiety and also to the very real fear of the effects of sleeplessness. Both place emphasis on the need for time to be spent reassuring anxious patients. Of the patients interviewed by Dodds (1), 13% said they

had wakened during the night and had subsequently found it difficult to get back to sleep again due to worry. However, none of these patients felt this was a good enough reason for calling the nurse. As Dodds did not investigate the nursing care received by the patients she interviewed, it is not known whether they received any nurse-initiated care.

There would seem to be a need for research, not only into the sleep of hospital patients and sleep-disturbing factors, but in conjunction with this an investigation of the nursing care received by patients at night - particularly those patients whose sleep has been disturbed.

2.11 Sleep disturbance by nursing care

Hilton's (2) study of patients' sleep patterns in an intensive care unit revealed that nursing care itself may disturb sleep. The sleep reduction experienced by the patients in this study - apart from being due to disturbance caused by noise - was, to a large extent also attributed to frequent interruptions for nursing observations and treatment.

Dodds (1) did not include acutely ill patients in the sample she interviewed about their sleep in hospital. She found that although 88% of those interviewed said

they had received some nursing care during the night, only 11% said they had been specifically wakened for it. However, no details are available as to the nature of this care.

While Hilton's study (2) was carried out in only one intensive care unit and involved a small sample of high dependency patients, the implications of her findings pertaining to interruption of patients' sleep for nursing observations and treatment could conceivably have implications for other ward settings. If patients are to obtain uninterrupted sleep then careful consideration must be given to this question of disturbing patients for observation and treatment. Longer periods of uninterrupted sleep could arguably be facilitated by careful planning of nursing care, based upon accurate assessment of the patient.

2.12 Patient-dependency and sleep

In theory, low dependency patients (defined in terms of patients' physical needs and dependence on nursing staff for direct care - although as Rhys Hearn (33) stresses, these patients may be highly dependent emotionally) should be less likely to be subjected to interruption of their sleep for nursing observations, treatment and care. But, as research findings have suggested (1,3,4), such patients may experience

difficulty in sleeping for a variety of other reasons. This has implications for nursing care if individual sleep requirements are to be met, and if patients' anxieties are to be lessened - (anxieties which may be making sleep difficult in the first place or anxieties which arise as a result of sleeplessness).

There is a lack of data pertaining to the nursing care of low dependency patients at night, and in the light of the implications to be derived from studies of nurse-patient interaction and communication during the day and of nursing activities at night, research in this area is indicated. That patients are of low dependency may in itself contribute towards determining the pattern and nature of interactions that nurses have with them.

2.13 Interacting with patients

From her study of nurse-patient interactions during the day Stockwell (5) discovered that interactions with patients were almost entirely task-initiated, the nurses not approaching patients unless they intended to carry out some treatment, provide a service, or required some specific information from the patient.

The second part of Dodds' work (1) which employed systematic activity sampling at three-minute intervals during the night produced profiles showing how nurses spent their time. It was found that patient-dependency was the only significant factor influencing the pattern of nurse-patient interaction at night. A limitation of this method of data collection is that much information may be lost during the intervals between activity sampling, but her findings do seem to support those of Stockwell (5). Nurses, it would appear, see their role as being largely related to aspects of physical care.

How patients see their role is also important. Some patients are said to regard nursing help as being related only to physical comfort and relief from pain (34). It has also been suggested that patients' beliefs that some nurses do not like 'demanding' patients, and patients' awareness of other, often 'sicker' patients are factors that lead to hesitancy in requesting nursing attention (6). Lorber (35) administered attitude questionnaires to 103 surgical patients pre-operatively and concluded that most general hospital patients enter hospital feeling that they should be obedient, co-operative and objective about their illness, and expect attention only if they are very ill. Stockwell (5) found that although there were some exceptions to the general pattern, the

patients in her study did not approach the nurses unless they had a specific need, and that patients felt the nurses were too busy to be bothered with 'trivial matters'. Similarly, 97% of the patients interviewed by Dodds (1) said they would only call for the nurse during the night in a 'real emergency'. They expressed a reluctance to bother the nurses, most believing that the nurses were too busy. Over half the patients involved in this part of Dodds' work who said they had experienced difficulty in sleeping felt that the nurses had not been aware of their difficulties, yet the patients themselves said they had been reluctant to take the initiative and call for a nurse unless they had a specific need. Regrettably, the part of Dodds' work which produced the profiles of nursing activities did not involve the same sample of patients as were interviewed about their sleep in hospital (these two aspects of investigation being carried out at different times). Had this been the case, more meaningful findings may have been obtained with regard to the care of those patients who, when interviewed, said they had experienced difficulty in sleeping.

Wilson-Barnett and Carrigy (36) maintain that the opportunity to talk is a major factor in patients' adjustment to life in hospital. In their study of patients' emotional reactions to hospitalization it

was found that the quietest, least expressive patients often reported most anxiety, yet these patients frequently received least attention from the nursing staff.

Low dependency patients, although they may not require as much attention for physical care as high dependency patients may nevertheless benefit from contact with nurses during the night if they are unable to sleep. But if nurses are mainly concerned with aspects of physical care it seems possible that these patients may not receive the appropriate nursing attention at night. Nurses have said that although they would like to spend more time talking to and reassuring patients other work is always more pressing. As Hockey (37) states: "Talking to patients is seen as an aspect of work that has low priority and is therefore undertaken only 'when there is time'." It seems possible that during the night there may be more time available for nurses to talk to patients who are unable to sleep. Dodds' profiles of nursing activities at night (1) showed that for 70% of the time the nurses were unoccupied (although this did include the time the nurses were away from the wards for their meal breaks). But as Dodds also found, only 2.5% of nursing activities was devoted to conversation which was not associated with any other activity. No details are provided as to the

content of these conversations.

Analyses of day-time conversations have suggested that the majority of nurse-patient conversations are task-orientated (38), with very few conversations being entirely social or concerned with emotional/psychosocial matters (39).

The review of the literature did not reveal any findings pertaining to the nature of conversations nurses have with their patients at night or to the nature of nursing attention given to patients who may be experiencing difficulty in sleeping.

2.14 Summary

Sleep, which is sensitive to change, is a basic physiological need. Each individual appears to have a sleep requirement, fulfilment of which is necessary for optimum physical and mental functioning. Failure to meet individual sleep requirements can produce unpleasant, even stressful side-effects. Research findings appear to indicate that patients of varying degrees of dependency experience difficulty in obtaining adequate sleep in hospital, and a number of factors thought to contribute towards this have been identified. But no findings are available as to the nature of any nursing attention received by those

patients whose sleep was said to have been disturbed.

Research studies which have explored nurse-patient interactions during the day suggest that most interactions are task-initiated and conversations mainly task-related, and a study of nursing activities at night suggests that patient dependency is the only significant factor influencing the pattern and nature of interactions nurses have with their patients.

Findings from studies of patients' views of the patient role appear to indicate a reluctance on the part of patients to summon nursing attention other than for specific physical needs.

Thus it appears that patients who are not highly dependent on nursing staff for physical care but who may nevertheless experience difficulties in sleeping during hospitalization may not receive the nursing attention appropriate to assisting them to overcome such difficulties and thereby meet their individual sleep requirements.

3. RESEARCH DESIGN

3.1 Introduction

A descriptive study was designed which aimed, in the first instance, to determine whether low dependency patients experience interruption of their normal sleep patterns during hospitalization. In conjunction with this, the study also aimed to explore the nature of interactions that this same group of patients have with night nurses.

The hypothesis to be tested was stated as follows: that low dependency patients are able to obtain what for them is a normal quantity and quality of sleep during hospitalization.

In the context of the study 'normal sleep pattern' refers to the quantity and quality of sleep which patients are used to obtaining at home. 'Quantity of sleep' refers to the number of hours sleep obtained per night. It is considered to be dependent on:-

a) the time available for sleep - or the time between the individual settling down for the night and the time of waking or being wakened in the morning;

b) the time taken by the individual to get to sleep after having settled down for the night (which may be influenced by a variety of factors);

c) the frequency and duration of awakenings during the night.

'Quality of sleep' is defined in terms of c) above - that is, the number of times the individual wakens and the length of time awake during the night.

Two research questions were also posed:-

1. If it is found that low dependency patients are not able to obtain a normal quantity and quality of sleep, what factors contribute towards this?
2. What interactions occur between low dependency patients and night nurses?

3.2 Methods of data collection

The methods available for assessing sleep include objective methods such as electroencephalogram (E.E.G.) and electromyogram (E.M.G.) recordings and visual observations, and subjective methods such as questionnaires, interviews, sleep logs and diaries. Johns (40) has reviewed sleep assessment methods and concludes that they all have inherent advantages and disadvantages and that the choice of method depends on the aims of the study.

In order to facilitate direct comparison of patients'

normal sleep patterns with those in hospital and identify any alteration that may occur in hospital along with the factors thought to contribute towards such alterations, it was decided to use the interview method.

Interviewing patients is admittedly subjective, but as has been pointed out (41), an individual's report of his sleep is a fundamental reflection of his personal experience. There is also evidence to suggest that assessments of sleep quality depend more on the subjective recall of a night's sleep and less on the objective measures that may be recorded during sleep (42). In addition, while E.E.G. recordings avoid the possibility of deliberate or unconscious distortion that can occur with subjective reports, they are expensive to perform and may make sleep more disturbed than it would otherwise be (40). It was therefore considered unacceptable to subject patients to this technique. (Additionally, the researcher's limited knowledge and skill in this area further precluded the possibility of employing such a method).

Although when comparing subjective estimates of sleep with E.E.G. recordings there appears to be a tendency in the formed to over-estimate the delay to the onset of sleep and the number of awakenings during the night, and to under-estimate the total sleep time, subjective

and objective results have been found to be significantly correlated (43). Conversely, there is the possibility that in the morning individuals may not recall having wakened during the night (7). Also, an important variation that only subjective methods can elicit is that a person may make up for sleep loss by sleeping for short periods during the day.
It was felt that using the same method to obtain patients' assessments of their sleep in hospital as that to be used to obtain details of their usual sleep patterns would enable direct comparisons to be made.

3.3 The interview schedule

An interview schedule was designed for use with the selected patients who were interviewed initially to obtain personal and background information, and details of their normal sleep patterns. Their views on certain aspects of night time in hospital were also sought (Appendix III).

Subsequently the same patients were again interviewed on three consecutive mornings using a second interview schedule to obtain their assessment on each occasion of the previous night's sleep (Appendix IV). It was decided to interview on three mornings in an attempt to obtain a more comprehensive picture of patients' hospital sleep patterns for comparison with their normal sleep patterns than Dodds (1) who interviewed

patients on one occasion only.

The interview schedule which was devised was similar to that employed by Dodds (1) so as to enable some comparisons of findings from the present study of sleep patterns to be made. After the schedule had been devised it was scrutinized by a senior nursing advisor whose constructive criticisms were used to modify the instrument. It was then pre-tested on a small sample of ten low dependency patients of similar characteristics to those who were to be selected for the main study. The pre-testing revealed a need for further alterations to some of the questions in order to improve respondent understanding.
A total of 114 variables were produced for computer analysis using the Statistical Package for Social Sciences (44), while a further eighteen variables were left uncoded, and although this meant it would not be possible to analyse them by computer, they did provide useful additional information.

The interviews took place at the patients' bedside, each taking about twenty minutes to complete.

3.4 Observation

In addition to interviewing patients on three consecutive mornings about their previous night's

sleep, a time-sampling method was employed whereby the same patients were observed at quarter-hourly intervals during the nights in question, and a record maintained of each patient's waking/sleeping pattern. Whilst this would provide interesting comparisons between patients' assessments of their sleep and the researcher's assessment, the information obtained was used primarily in conjunction with the data pertaining to the nurse-patient interactions which occurred during the night (see below).

A limitation of observation in this context is that it is sometimes difficult to distinguish between periods when an individual is awake and lying quietly and when he is asleep (40).

The criteria for the presence of sleep were those employed by Kupfer and his associates (45) in a comparative study of E.E.G. recordings and systematic nursing observations of sleep in which the correlation coefficient was significant at .05 or higher. The patient was scrutinized for between thirty and sixty seconds for the following:-

a) closed eyes;
b) relaxation and immobility;
c) regular respiration;
d) apparent unresponsiveness to incidental environmental stimuli.

A recording system was devised which enabled not only a record to be maintained of when the patients were awake or asleep, but which also incorporated in the coding system used an indication of the patients' waking/sleeping patterns in relation to the interactions that the patients had with the nurses during the night (see below). This would enable the researcher to measure the length of time patients were awake during the night without any nursing intervention occurring, and to evaluate (in terms of the length of time patients remained awake following any interactions that did occur) the effectiveness of those interactions.

3.5 Observation of interactions

In order to discover the nature of the nursing care and attention received by low dependency patients at night, rather than carry out a study along similar lines to Dodds (1), the emphasis of which was on the sequential activities of the night nurses and which did not link nursing care with the study of patients' sleep patterns, it was decided to observe and record the interactions that occurred between the night nurses and the selected patients.

A variety of methods of classifying data have been employed by researchers who have studied nurse-patient interaction during the day. Goddard (46) calculated

the amount of time nurses spent in personal contact with patients, and Moult (47) measured the amount of conversation patients had with nurses. Stockwell (5) looked at the reasons for nurses and patients initiating interactions, while Senior (48) studied 'individual contact' which included any occasion on which nurses talked to patients either to give comfort or advice, or as a social contact. Bond (49), in a study of communication in a radiotherapy department categorized conversations into four broad categories according to content.

Nursing activities have also been classified in a variety of ways. For example, physical care has been categorized according to whether it was basic or technical (46,50,51), and also as to whether or not it was patient-oriented - that is, according to individual patient needs as opposed to 'routine care' which is provided to all patients routinely according to policy (32).

After a period of unstructured observation over several nights, a combination of methods of classification previously used was considered to be most appropriate to the aims of the present study. The recording sheet which was to be used for the quarter-hourly recordings of patients' waking/sleeping patterns was expanded to facilitate the recording of details pertaining to each

interaction as it occurred (Appendix V). An interaction was regarded as including any conversation between the night nurses and the selected patients, and any nursing activities which directly involved those patients. The interaction details which were recorded were as follows:-

a) the time the interaction began: (the time the conversation or nursing activity directly involving the patient commenced - whichever was first);

b) whether or not the patient had slept since the previous interaction;

c) the time lapse to the commencement of the interaction:

either i) the time since the termination of the previous interaction if the patient had not slept between times,

or ii) the time the patient had been awake prior to the interaction occurring,

(to provide information as to how long patients were awake during the night without any interactions occurring);

d) who initiated the interaction;

e) others involved in the interaction;

f) the nursing activities that took place during the interaction;

g) the time the interaction was terminated: (the time the nurse left the patient or the time conversation ceased - whichever latest);

h) the duration of the interaction;

i) the appropriate conversation code(s): (carried out at a later time, as explained below).

Each patient, in addition to having a recording sheet incorporating data pertaining to his waking/sleeping pattern and interactions as outlined above, was allocated a second recording sheet. On this, each interaction was appropriately numbered and the conversation which took place was noted down as it occurred. These notes were subsequently expanded during the intervals between interactions and between the quarter-hourly observation and recording of patients' waking/sleeping patterns while still relatively recent. This helped to counteract the boredom of maintaining the observed role when there was no action to observe. At a later time each recorded conversation was coded twice - once by the researcher and then independently by a nursing colleague after the coding system had been fully explained and practice obtained with the data collected during the pilot study. The appropriate code numbers were then entered into the columns of the modified recording sheet allocated for this purpose. Nine categories of conversation were devised which facilitated coding and classification of the verbal interaction data. It would then be possible to identify the reasons why nurses and patients initiated interactions, and also the content of these interactions (Appendix VI).

Being able to overhear what is being said and see what action is taking place during interactions - especially at night when voices tend to be lowered - could have posed an observational problem. However, placement of patients in the wards was such that patients of low dependency were generally nursed in one area of the ward. This made it possible for the researcher to position herself in such a way that she was able to overhear the conversations which took place between the nurses and the selected patients. On the occasions when the screens were drawn round a patient's bed to afford privacy for the patient and observation of any physical care that may have been given was not possible, the conversation which took place in conjunction with that care frequently provided the necessary information. If however there was any doubt about this the nursing staff concerned were asked to describe the care that had been given.

In relation to the recording of the conversations that took place, the use of tape recordings was considered but subsequently abandoned as it was felt that this procedure might have an inhibitory effect on both patients and nurses. The presence of an observer is in itself acknowledged as a factor that may result in changes in nurses' behaviour. But Altschul (52) argues that one would expect changes in nurses' behaviour due to being observed "...to have

occurred in the direction in which the nurses themselves thought their behaviour desirable...their own bias would be increased and therefore observer effect could not invalidate the investigation." Note-taking, which was the method finally selected for recording conversations may generate anxiety in those whose conversations are being noted, but if carried out in a discreet manner it was felt that this problem could be lessened. The conversations had to be noted as they occurred; if an immediate recording had not been made memory lapses might have resulted.

It was recognized that observational and recording problems may arise when more than one of the selected patients was involved in separate interactions with nurses at the same time. If this occurred only one interaction could be accurately observed and recorded and valuable information could be lost. It was therefore decided that on occasions when this happened the nursing staff involved in the interaction that had not been recorded would be asked to relate what had taken place, and the time and duration of the interaction would be estimated. However, it was also decided that on any given night of the study no more than four patients would be involved in the data collection. Not only would this help to minimize the

incidence of simultaneous interactions, but it would also help to keep the amount of data to be collected within manageable limits.

3.6 Period of observation

The observation and recording of patients' waking/sleeping patterns in conjunction with that of nurse-patient interactions commenced each night at 9.30 p.m., which was the time that the night staff came on duty. The final observations were made at 7.00 a.m. in order to allow time for the researcher to interview each patient about his/her previous night's sleep prior to breakfasts being served. (As it happened, all patients were awake by this time, but had this not been the case those still sleeping would have been left to sleep on and would have been interviewed later.) It is acknowledged that the decision to terminate observations at this time resulted in the loss of some information pertaining to interactions which may have occurred between 7.00 a.m. and 8.00 a.m. when the night staff went off duty.

The researcher allowed herself one break of fifteen minutes during the night which was taken between 2.00 a.m. and 2.15 a.m. Patients' waking/sleeping states were checked immediately prior to the break and immediately on return, but it is acknowledged

that there was a loss of a limited amount of data pertaining to any interactions that may have occurred during this time as these were not observed or recorded. However, the benefits derived from taking a break - with regard to the improvement in the researcher's alertness, concentration and comfort thereafter - were felt to outweigh this disadvantage.

3.7 The hospital

Constraints of time and personnel necessitated restriction of the collection of data to one hospital, so a large teaching hospital in the west of Scotland was selected. Within this hospital it was decided to include only low dependency medical patients in the study. This enabled the researcher to use a larger sample of patients from one specialty rather than relatively few patients from a variety of specialties. A limitation of these decisions however is that generalization of the findings to the low dependency hospital population is not possible, nor is it possible to generalize to all low dependency medical patients as only one medical unit formed the basis for sample selection and data collection.

Research access was granted following full consultation with the divisional nursing officer and the director of nurse education. The informed consent of the relevant medical staff was also obtained.

Thereafter, the researcher liaised with the senior night duty nursing staff who were fully informed as to the nature of the study. Other night duty staff in the wards used in the study were provided with an outline of the intended research. This, it was hoped, would help to minimize any bias that might occur in relation to the nursing care given to the selected patients.

Four open-type Nightingale wards (two male and two female) were used in the study which made observation easier than would have been the case if wards had been used which were divided into single cubicles or four-bedded areas. This was also in keeping with the type of wards in which the patients who were interviewed by Dodds (1) about their hospital sleep patterns were nursed.

The medical unit was staffed by a permanent night staff (trained and untrained), the majority working on a part-time basis - one, two or three nights per week. Many worked set nights each week, but there was no guarantee that any particular nurse would be in the same ward for each night of her working week. In two of the wards a system of 'internal rotation' was in operation whereby trained staff (staff nurses and enrolled nurses) spent one week in every six to eight weeks on night duty and the remainder on day duty.

Nurse learners - both student and pupil nurses at various stages of training - were allocated to night duty in the medical unit as part of their training programme. Each learner remained in the same ward for the duration of his/her night duty allocation.
A total of fifty three nursing staff worked in the wards during the course of the study (Appendix VII), although this figure does not include the night sisters and other senior nursing members of the night staff who paid brief visits to the wards at various times during the night and who may subsequently have been involved in the interactions that were observed and recorded.

3.8 Selection of patients

Although emotionally-dependent patients may generate a workload greater than that of well-adjusted physically disabled patients, in the assessment of nursing dependency the degree of physical disability is commonly regarded as being synonymous with dependency (33). Patients' nursing dependency in this context is related to their need for direct care which is patient-oriented and which includes only those items of nursing care which can be directly attributed to the specific needs of the individual patients. The Aberdeen Formula devised by the Scottish Home and Health Department (53) as a basis for calculating staffing according to

nursing workload per patient, defines the nature of the requirements of patients in five categories of dependency and was used in the present study as the basis for the selection of patients for inclusion in the sample. It was decided that patients whose requirements could be said to fall into either Category D (semi-ambulant) or Category E (totally ambulant) would be regarded as being of low dependency (Appendix VIII). Additionally, in an attempt to reduce the effects that a change in sleeping environment following admission to hospital may have on an individual's sleep pattern, patients were not included in the study until they had already been in the ward for a minimum of three nights.

According to the above criteria, a total of fifty patients (twenty five male and twenty five female) were selected in consultation with the senior nurse on duty in the ward. Confused, deaf and aphasic patients were excluded, as were patients with liver disease. Details of the sample population are given in Appendix IX. Each potential subject was approached and the researcher introduced herself as a nursing research student based at Glasgow University, who was interested in sleep patterns. The patient was asked if he/she would be willing to help with the research which would involve an initial interview about his/her sleep at home and then a further interview on three consecutive mornings

about the previous night's sleep in hospital. It was stressed that the researcher was independent of the hospital in order to avoid implying affiliation with the nursing staff, and also that any information obtained from the patient would be treated confidentially and with anonymity. The patient was also advised that the researcher was studying the nursing care patients received at night. No further elaboration was given as it was felt that if patients were more informed this could have influenced the pattern of nurse-patient interactions. All patients who were approached appeared to be satisfied with this brief statement regarding the observations although several were later curious as to the nature of the notes that were being made during the night. Their queries were answered by explaining that the researcher was recording details of what happened between patients and nurses at night. This explanation appeared to be adequate. No patient who was approached refused to participate in the study, and all were very interested and helpful.

3.9 Duration of the study

To complete the data collection required a total of eighty three nights over a period of twenty two weeks. The number of nights worked by the researcher each week varied between three and six and, to a large extent, was governed by the availability of suitable

patients who could be included for three consecutive nights without exceeding the upper limit of four patients on any given night. At times, the lack of availability of low dependency patients who had already been in the ward for three nights was such that there were several occasions when three or four nights of data collection resulted in data sets pertaining to only one or two patients. That patients are now discharged earlier than in the past possibly contributed to this. Another problem that was experienced relates to the fact that plans for patients' discharge from hospital are frequently not known well in advance. On at least three occasions the researcher had included patients in the study only to find that by the second or third night of their intended inclusion these same patients had been discharged. The data that had been collected was incomplete and therefore had to be discarded. The actual nights of the week during which sets of data were collected was varied from week to week, and it was ensured that a number of 'receiving' nights for emergency admissions for each ward were included - a variable which may be important in relation to sleep-disturbance of the sample population.

4. SLEEP PATTERNS

4.1 Introduction

The data collected during the course of the interviews with patients was analysed in two ways. Firstly, various aspects of sleep in hospital were compared with patients' normal sleep patterns and, where appropriate, patients' overall hospital sleep patterns (i.e. the sleep obtained by each patient over the three study nights) were compared with the sleep that the patients could reasonably have been expected to obtain at home over the same period. Secondly, patients' hospital sleep patterns were analysed in terms of the total number of nights the sample population were included in the study: fifty patients, each included for three nights, giving a total of one hundred and fifty nights.

4.2 Amount of sleep

When the total amount of sleep each patient obtained over the three nights of their inclusion in the study was compared with the total amount of sleep each would have expected to obtain at home over the same period 76% (n38) were found to have a 'sleep deficit'. In other words, they had obtained less sleep in hospital

than they would have expected to have obtained at home over three nights. Of those who had an overall sleep deficit, 63% had not achieved their normal amount of sleep on any of the three nights, while the remaining 37% obtained less sleep than usual on at least one of the three nights and did not manage to make up for the deficit on the other night(s). The total sleep loss for 44% of those with a sleep deficit was more than four hours, and for 18% was more than six hours. Six per cent of the sample 'broke even' over the three nights, achieving a total amount of sleep equivalent to that which would have been expected at home. This was despite one 'poor' night, when less than the usual amount of sleep was obtained. The remaining 18% of the sample were found to have a 'positive balance', having obtained more sleep than would have been expected at home over three nights. The total sleep increase was in excess of four hours for 33% of those with a positive balance and less than four hours for the remaining 67%.

The total amount of sleep reduction was found to be greatest among those individuals who said they usually slept for seven hours or more each night, and less among those who usually slept for fewer than seven hours each night. Whereas 58% of those who usually slept for seven hours or more each night had an overall sleep deficit in excess of four hours, the corresponding figure for those who usually slept for between five and

seven hours each night was 27%. No patient who usually slept for less than five hours a night had a total sleep deficit greater than four hours. The converse was the case with those individuals who achieved a positive balance over the three nights. Of those who usually slept for between five and seven hours the total sleep increase was less than two hours for 33% and more than two hours but less than four hours for 67%. Of those who usually slept for less than five hours each night, 50% achieved a total increase of between four and six hours. However, although when comparing the researcher's assessment of the patients' sleep with the patients' own assessments the correlation coefficient was significant at >.10, there is no guarantee that the data pertaining to the patients' usual sleep patterns is accurate. Some patients who maintained that they usually slept for more than seven hours a night may have over-estimated their sleep-time, just as some of those who said they usually slept for less than this may have under-estimated their sleep-time.

Some patients may make up for loss of sleep by sleeping during the day, but even when this was taken into consideration, 54% of the sample still had an overall sleep deficit which, for 30% of these was in excess of four hours. The number of patients who now broke even was increased to 14% of the sample, and the remaining 32% now had a positive balance which, for 25% of

these individuals, was in excess of four hours.

In an attempt to explain the possible reasons underlying low dependency patients' apparent inability to obtain what for them is a normal amount of sleep in hospital, the time that patients settled down for the night, their ease or difficulty in getting to sleep, the frequency and duration of periods of wakefulness during the night, and the time of morning waking were explored.

4.3 Time of settling down

When at home 8% of the sample usually retired before 10.00 p.m., 16% at midnight or later, with the remainder retiring some time between 10.00 p.m. and midnight. In hospital the time of retiring was between 10.00 p.m. and midnight for each subject on each of the three nights of their inclusion in the study. Generally, patients were said to be satisfied with the time of settling for the night, although 6% felt it was a little too early. (These were individuals who did not usually go to bed until after midnight.)

4.4 Difficulty in getting to sleep

It is impossible to define with any precision the concept of 'difficulty' in relation to getting to sleep, and it is necessary to rely on each individual's

interpretation. Individual interpretation will depend on how quickly a person expects he should get to sleep. Thus, it is quite possible that while one person may consider himself to experience difficulty in getting to sleep if he takes half an hour to do so, another may not be of the same opinion even though it takes him in excess of one hour. Individuals' assessments of whether or not they experienced difficulty in getting to sleep in hospital will, to a large extent, be based on the established pattern of the time it usually takes at home.

In hospital, 48% of the sample considered themselves to have had difficulty in getting to sleep on at least one night. This 48% was comprised of 18% of the total sample who maintained that they usually experienced difficulty at home and 30% who did not usually have any difficulty. These changes were not significant (McNemar test for significance of change: $s > .45$). The remaining 52% had no difficulty in getting to sleep on any of the study nights, although half of this group maintained that they usually encountered difficulty at home.

Although 48% of the sample were said to have difficulty in getting to sleep in hospital this difficulty was not encountered every night by each patient. Of those who experienced difficulty, 58% (n14) did so on one night, 29% (n7) on two nights and 13% (n3) on each of the three

nights (Appendix X). In all, the 48% who experienced difficulty in getting to sleep in hospital did so on 51% (n37) of the nights they were included in the study. In the context of the entire sample, patients experienced difficulty on 25% of the study nights. In all instances when patients maintained that they had experienced difficulty in getting to sleep the time taken to do so was in excess of half an hour. In 73% (n27) of instances the time taken was longer than one hour and in 22% (n8) of instances longer than two hours.

4.5 Cause of difficulty in getting to sleep

Of the 26% who gave a history of experiencing difficulty in getting to sleep at home but who had no such problem in hospital 46% (n6) attributed the cause of home difficulty to physical factors and 31% (n4) to psychological factors. It seems possible that for this group of patients hospital treatment may have resulted in an improvement of their physical condition which, in turn, may have lessened their anxiety thus making it easier for them to get to sleep. It was also found that 69% (n9) of these individuals took sleeping tablets in hospital which they never took at home. This may also have contributed to the reduction in sleep latency in some instances. However, these explanations do not seem to be applicable to the 30% who did not usually

experience difficulty in getting to sleep at home but did so in hospital. Physical factors were cited as the cause of difficulty on 24% (n4) and psychological factors on 36% (n5). Forty seven per cent of these patients took sleeping tablets in hospital which they never took at home. Of the 18% of the sample who experienced difficulty in getting to sleep at home and who continued to do so in hospital there was little change in the incidence of factors thought to underlie the difficulty. There was no relationship between difficulty in getting to sleep and the duration of current stay in hospital prior to inclusion in the study or previous experience of hospitalization.

Patients were of the opinion that on only 32% (n12) of the nights when difficulty had been experienced in getting to sleep that the night nurses had been aware of their difficulties. These opinions were said to be based on the fact that the nurses had interacted with the patients concerned. On a further 49% (n19) of nights when patients had found it difficult to get to sleep the patients felt that the nurses had not been aware of their difficulties, and on the remaining 19% (n17) of these nights the patients concerned were unsure. In the latter instances the opinions were said to be based on the fact that while the nurses had not approached the sleepless patients the patients felt that the nurses might have observed that they

were still awake.

4.6 Night awakenings

Only 8% of the sample said they did not usually waken during the night at home. All of these individuals experienced at least one disturbed night in hospital, with 50% having three disturbed nights. Of the remaining 92% who said they were in the habit of wakening during the night, 63% (n29) had three disturbed nights. Two per cent of this group had three undisturbed nights. In effect, night awakenings were experienced during the course of 85% (n127) of the nights of the study. The number of awakenings per night in hospital when compared with the number of awakenings patients said they usually experienced per night at home was increased on 33% (n42) of these nights.

4.7 Sleep-disturbing factors

Physical factors were cited as having caused patients to waken on 51% (n65) of the disturbed nights, environmental factors on 20% (n25), and psychological factors on 3% (n4). On 26% (n33) of disturbed nights the patients concerned were unable to identify any factor which may have caused them to waken. (See Appendix XI for a further breakdown of sleep-disturbing factors.)

4.8 Difficulty getting back to sleep

On 44% (n56) of the disturbed nights patients said they had found it difficult to get back to sleep on at least one occasion on each of these nights. On 50% (n28) of the disturbed nights when difficulty was experienced in getting back to sleep the patients estimated that they had spent longer than one hour but less than two hours awake during the course of the night, and on 45% (n25) that they had been awake for in excess of two hours.

Return to sleep was said to have been hindered by physical factors on 32% (n18) of the nights when difficulty was considered to have been experienced. Environmental factors were blamed on 21% (n12) of occasions and psychological factors on 18% (n10). On less than half of the disturbed nights when patients found it difficult to get back to sleep did those concerned feel that the nurses had been aware of their difficulties. Again, these opinions were said to be based on the fact that the patients had not received any attention from the nurses during their experienced periods of wakefulness.

4.9 Time of morning waking

At home, if there was no demand to get up for work or other reasons, 84% of the sample said they usually slept beyond 7.00 a.m., and 72% beyond 8.00 a.m.

In hospital during the course of the study no patient slept beyond 7.00 a.m. on any morning. On 6% (n9) of mornings patients were awake before 5.00 a.m., and on 42% (n62) after 5.00 a.m. but before 6.00 a.m.

4.10 Cause of morning waking

Patients felt that they had wakened naturally on 41% (n61) of mornings, but that something had caused them to waken on the remaining 59%. Environmental factors were cited as having wakened patients on 37% (n33) of these mornings, and social factors on 49% (n44). When environmental factors had caused wakening this was said to have been due to noise created by the nursing staff wheeling trolleys, moving about the ward, and attending to other patients on 52% (n17) of these mornings. The switching on of the main ward lights was considered to have caused patients to waken on 30% (n10) of these occasions, and on 18% (n6) was said to have been due to other patients calling out. On 82% (n27) of the occasions when environmental factors caused patients to waken the patients concerned said they would have preferred to have slept on.

Social causes of morning waking consisted of nurses rousing patients - either to offer a cup of tea, to administer treatment, or to carry out physiological observations. On 70% (n31) of these occasions patients

said they would have preferred to have been allowed to sleep on. (See Appendix XII).

(On 48% (n19) of the occasions when patients were wakened by nurses offering a cup of tea the patients concerned had no further contact with the nurses. The practice of wakening patients so early just for tea is therefore open to ,question.)

4.11 Satisfaction with sleep

Satisfaction with each night's sleep was expressed by 40% of the sample, while 46% and 12% were satisfied with their sleep on two and one night respectively. Only 2% expressed dissatisfaction with each night's sleep. (See Appendix XIII).

Overall, patients were said to be satisfied with their sleep in hospital on 75% (n112) of the study nights, and dissatisfied on the remaining 25% of nights. Although satisfaction with sleep was expressed by patients in relation to three quarters of the study nights, the time taken to get to sleep was longer than usual on 42% (n47) of these nights, and on 64% (n30) of the nights when this time was increased the patients concerned had considered themselves to have experienced difficulty in getting to sleep. It was also found that there was an increase in the number of night awakenings and in the time awake during the night on 29% (n32) and 43% (n48) of satisfactory nights respectively.

Although satisfied with their sleep, fewer hours sleep were obtained on 62% (n69) of these nights. (See Appendix XIV).

When patients expressed dissatisfaction with their sleep the reasons given were mainly those of having experienced difficulty in getting to sleep, waking too often during the night, and spending too long awake during the night. (See Appendix XIV).
Comparing dissatisfied patients' hospital sleep with their usual sleep patterns, on 89% (n34) of these nights the patients had obtained fewer hours sleep, and had spent longer than usual awake during the night on 92% (n35) of dissatisfied nights. (See Appendix XIV).

Despite the relatively high proportion of nights when difficulty was experienced in getting to sleep, when the frequency and duration of periods of wakefulness during the night were increased, and when the time of morning waking was earlier than usual, dissatisfaction was expressed in relation to only a quarter of the nights of the study. Reluctance to express dissatisfaction may be an indication of unwillingness on the part of the patient to appear to be criticizing those who are caring for him. It may also indicate that patients have low expectations with regard to sleep in hospital.

4.12 Summary

Taken over the three nights of each patient's inclusion in the study, three quarters of the sample accrued a sleep deficit, and even when day-time sleep was taken into consideration over half the sample still did not obtain as much sleep as they would have expected to have obtained at home over the same period. As well as quantity, the quality of sleep in hospital was adversely affected by the frequency and duration of periods of wakefulness during the night. Early morning waking also contributed to the reduced quantity of sleep that patients experienced.

That dissatisfaction with sleep was expressed in relation to only a quarter of the study nights was contrary to what might have been expected in view of the relatively high incidence of reduced sleep-time and the increased frequency and duration of night awakenings. However, the majority of those patients who had been wakened in the mornings by environmental factors or who had been roused by the nursing staff did say they would have preferred to have been allowed to sleep on.

Patients were frequently of the opinion that the nurses were unaware of the difficulties that they were experiencing either in relation to getting to sleep initially or in returning to sleep having wakened during

the night.

In the light of the findings derived from the investigation of the sleep of low dependency patients, the following chapter explores the nurse-patient interactions that occurred during the night.

5. NURSE-PATIENT INTERACTIONS

5.1 Introduction

During the course of the investigation a total of 924 interactions were observed and recorded. As with the data obtained from the interviews with patients about their sleep, the observational data pertaining to nurse-patient interactions in conjunction with patients' waking/sleeping patterns has been dealt with in different stages.

Initially, the nature of the interactions patients had with nurses prior to settling down for the night has been explored. Subsequently, what took place after patients had settled down but before they got to sleep, and then what happened when patients wakened during the night has been examined. The events which took place once the nurses began their morning routine forms the final section of the study of nurse-patient interactions.

5.2 Prior to settling for the night

During the time between the night nurses coming on duty and the main ward lights being switched off, a total of 480 interactions were observed and recorded, the nurses being observed to have initiated 86% (n414)

of these interactions. As might be expected - this being a busy time for the nurses with routine treatments and observations to be completed and patients assisted to settle down for the night - 83% (n342) of the interactions which nurses initiated were task-initiated. Further analysis of the task-initiated interactions showed that 75% (n256) of these involved conversation solely concerned with the task(s) being performed. Four per cent (n14) involved some discussion pertaining to the patients' illnesses or worries, the remainder including conversation of an incidental nature.

Of the interactions which were initially of an incidental nature, 12% (n8) subsequently related to tasks performed during the interactions, while 7% (n5) involved conversation which was illness-related.

Forty per cent (n2) of the interactions which were initially illness-related included incidental conversation, 20% (n1) conversation pertaining to tasks that were subsequently performed, while 40% (n2) were solely concerned with the patients' illnesses.

Some patients were observed to have settled down prior to the main ward lights being extinguished, and 5% (n21) of nurse-initiated interactions involved the nurses interrupting patients' attempts to get to sleep in order to administer drugs or carry out physiological

observations. While the majority of these interruptions occurred within half an hour of the patients settling down, 39% (n8) occurred in excess of half an hour of this time. On 29% (n6) of the occasions the patients concerned appeared to have succeeded in getting to sleep only to find themselves being disturbed by nurses wishing to check their blood pressures and pulses. Although no patient overtly complained at having been disturbed, each made the point that he/she had been sleeping.

Example:

Nurse: "Mrs --. Mrs --."
(Patient stirred)
"It's me - I've come to disturb you once more."
Patient: "Oh. I think I was sleeping then."
Nurse: "I just want to check your blood pressure before you go to sleep."
Patient: "I think I was already asleep."
Nurse: (Proceeded to check patient's blood pressure and pulse)
"There you are. I think that's all we're going to do to you tonight."
Patient: "Thank you. Goodnight."

Admittedly, nurses cannot do everything at once and there may be other, more pressing demands on their time with the result that some less urgent tasks do not take

precedence and have to be carried out later. But perhaps with more careful planning these tasks could be undertaken before such times as patients have settled down to sleep. One must also question the need to disturb sleeping patients (or even those who may not be asleep but who have obviously settled down for the night) for routine observations when the patient's condition appears to be satisfactory and not giving cause for concern.

Fourteen per cent (n66) of the interactions which occurred prior to patients settling down for the night were initiated by patients. Of these, 27% (n18) were in the form of requests for nursing services, while the remainder were of an incidental nature. The requests for nursing services were all granted and subsequent conversation during these interactions pertained solely to the tasks which were performed.

In all, 77% (n369) of the interactions that occurred prior to the main ward lights being switched off were either task-initiated, requests by patients for nursing services, or were interactions which although initially of other categories subsequently included task-related conversation.

The majority of interactions which occurred prior to patients settling for the night were of short duration,

95% (n455) being terminated within two minutes. It was noticeable that all the interactions which were of more than five minute's duration involved not the night nurses who were on duty in the ward that night, but either the day duty sister who had not yet gone off duty or the night sister who was visiting the ward to do a ward round. Additionally, all these interactions involved conversation pertaining to patients' worries or were related to illness. A possible explanation for this is that at this time, because of the amount of work the night nurses have to get through, the pressure of the work-load is such that they feel unable to spend much time with any one patient and in any interaction that does take place physical care has to take precedence. Similarly, patients may be aware of the amount of work the nurses have to cope with and will therefore not want to take up too much of the nurses' time. There were however instances where patients appeared to be eager to discuss their progress with the nurses, but for their part nurses seemed to avoid involving themselves in such conversations which, from a purely subjective evaluation, appeared not to provide the reassurance which the patients were seeking. One such patient whose pulse rate had earlier been causing some concern to the medical staff serves as a good example. The nurse approached the patient with the intention of checking her blood pressure, pulse and temperature:

Nurse: "Hello."

(Nurse placed thermometer in patient's axilla)

Patient: "Hello."

Nurse: "How's things?"

Patient: "I'm still warm, and I've just got a sheet on."

(Nurse proceeded to check the patient's blood pressure)

Patient: "Is the pulse high?"

Nurse: "I haven't checked your pulse yet."

Patient: "The doctor got it to seventy two this morning."

(Nurse checked the patient's pulse rate)

Patient: "What is it?"

(Nurse removed thermometer from patient's axilla and checked the reading)

Nurse: "That's great. Everything's fine."

Patient: "Well I hope it is. He got it to seventy two this morning."

Nurse: "O.K."

As no attempt was made during the study to obtain nurses' interpretations of the interactions that they had with patients one can only suggest that nurses' apparent reluctance to involve themselves in what may turn out to be relatively lengthy conversations is influenced by the amount of other work that they have to get through. But, having made this suggestion, it

could equally be argued that ensuring patients' peace of mind should be an essential part of any nurse's patient care.

A summary of the interactions that occurred prior to patients settling down for the night is given in Appendix XV.

5.3 After patients had settled down for the night

It will be recalled from the analysis of sleep in hospital that on thirty seven nights patients had considered themselves to have experienced difficulty in getting to sleep. It is therefore proposed to examine the pattern and nature of the interactions that occurred during this time.

On 78% (n29) of these occasions no interactions took place between the patients concerned and the night nurses, despite the fact that in 76% (n22) of these instances patients remained awake for longer than one hour and in 7% (n2) of instances for longer than two hours before eventually getting to sleep. When interviewed in the morning the patients were of the opinion that in 90% (n26) of the instances when they had experienced difficulty in getting to sleep and no interactions had occurred the nurses probably hadn't been aware of their difficulties. Rather than 'bother

the nurse' they had decided to lie quietly and continue trying to get to sleep. In the remaining instances the patients felt that the nurses were aware that they were still awake, but the nurses did not attend to these patients and again the patients said they had not wanted to 'bother the nurses'. The patients' difficulty in getting to sleep on 17% (n5) of these instances when no interactions occurred was said to have been due to physical factors such as pain, discomfort and troublesome cough, and on 41% (n12) of instances to psychological factors - namely worry or anxiety. Whether or not the nurses were in fact aware that patients were experiencing difficulty in getting to sleep (for whatever reason) was not explored. Nor was an assessment made of whether at these times the nurses were busy attending to other patients. One might question therefore, whether this group of patients received the nursing care appropriate to their needs at this time.

On the remaining 22% (n8) of occasions when difficulty was said to have been experienced in getting to sleep, a total of eighteen interactions were observed to occur between the patients and nurses. Eighty three per cent (n15) of these interactions were initiated by nurses, and of these 33% (n5) were requests for information in which the patient was asked if he/she was alright. Having received answers in the affirmative, the

interactions were terminated.

Examples:

1.

Nurse: "Hello. Alright?"

Patient: "Yes thanks."

2.

Nurse: "Alright?"

Patient: "Fine."

Nurse: "That's good."

3.

Nurse: "Are you alright Mr --?"

Patient: "I hope so."

Nurse: "So do I. No, seriously, are you O.K.?"

Patient: "Yes thank you."

A further 47% (n7) of nurse-initiated interactions at this time were similar requests for information, but in each instance the nurses either appeared to be aware that the patients were having difficulty in getting to sleep, or this fact was commented on by the patients. However, no attempts were made by the nurses to try and elicit the possible underlying causes.

Examples:

1.

Nurse: "Can you not sleep?"

Patient: "Not really."

Nurse: "Are you warm enough?"

Patient: "Yes thank you. I'm fine."

Nurse: "That's good. I'm feeling a bit cold just now."

2.

Nurse: "What's the matter? Are you alright?"

Patient: "Oh, I'm alright. I'm just not able to sleep. So much for sleeping tablets!"

Nurse: "Come on and I'll sort your bed out for you."
(Nurse adjusted the patient's covers and the interaction then terminated.)

The remaining 20% (n3) of nurse-initiated interactions occurring at this time were classed as being task-initiated in that nurses approached the wakeful patients and offered them cups of tea. Again, nurses' awareness of the patients' inability to sleep was evident.

Example:

Nurse: "Are you not sleeping?"

Patient: "No."

Nurse: "Do you want a cup of tea?"

Patient: "I wouldn't mind. Two sugars please."

(Nurse went to make tea which she then brought to the patient.)

Nurse: "There you are."

Patient: "Thanks."

Again, no effort was made by the nurses to spend time talking to the patients which might have revealed why they were finding it difficult to get to sleep so that the appropriate measures could then have been taken to try and help overcome those difficulties.

Only 17% (n3) of the interactions that occurred after patients had settled down for the night were patient-initiated. In each instance the purpose of initiating an interaction was to request nursing services - either drugs for the relief of pain or milk to drink. Patients' requests were granted without question, no attempts being made by the nurses to explore with the patients how they were feeling.

Example:

Patient: "Nurse!"

Nurse: "What's wrong? Have you got pain?"

Patient: "Yes. Just here (Pointing to abdomen). Can I get something for it?"

Nurse: "I think you're written up for distalgesic. Do you want a couple?"

Patient: "Distalgesic? I could try them. I don't think they do much good though."

(Nurse brought drugs for patient)

Nurse: "Here we are - these are what you're written up for. I can't give you anything you're not written up for. See if they help."

Patient: "Thank you."

The time interval between patients settling down for the night but subsequently experiencing difficulty in getting to sleep and the initiation of interactions was, in all instances, greater than thirty minutes. No patient delayed for longer than one hour to request nursing service, and 66% (n2) of the patient-initiated interactions were found to have occurred within forty five minutes of the patients having settled down for the night. The majority of nurse-initiated interactions occurred within forty five minutes of the patients having settled for the night, but in 20% (n3) of instances the patients had been trying to get to sleep for longer than one hour.

Without exception, all the interactions that occurred during this time were of less than two minutes' duration. All patient-initiated interactions and

80% (n12) of nurse-initiated interactions were of less than one minutes' duration. (A summary of the interactions that occurred after patients had settled down for the night but prior to their having slept is presented in Appendix XVI.)

5.4 During the night when patients wakened

All patients included in the sample were observed to have at least one disturbed night, with 64% having three disturbed nights. Looked at in terms of the total number of nights the sample were included in the study, 86% (129) of nights were disturbed (See Appendix XVII.)

During the course of 40% (n52) of the disturbed nights when patients experienced one or more periods of wakefulness no interactions occurred between the nurses and the wakeful patients during any of the periods of wakefulness. During the remaining disturbed nights interactions were observed between the nurses and the wakeful patients during some but not all periods of wakefulness. In all, 289 periods of wakefulness were observed during the course of the study. No interactions occurred during 63% (n181) of these periods, while during the remaining 37% (n108) of observed periods of wakefulness interactions were observed and recorded.

Admittedly, 81% (n147) of the observed periods of wakefulness during the course of which no interactions occurred were of less than thirty minutes' duration, and it could be argued that rather than interrupt patients' attempts to get back to sleep it is more appropriate to adopt a policy of non-intervention unless the patient is restless, appears to be distressed, or if the period of wakefulness continues. Conversely, thirty minutes might seem to be a long time to be awake during the night for some individuals, and a few reassuring words from a nurse may be much appreciated. The remaining periods of wakefulness during which no interactions occurred extended beyond thirty minutes' duration, with 21% (n7) of these lasting for longer than one hour but less than one and a half hours before the patients concerned got back to sleep. (Appendix XVII.)

During the course of the remaining 108 periods of wakefulness that were observed, a total of 162 interactions occurred. Of these, 67% (n109) occurred following patients having wakened while the rest occurred subsequent to an earlier interaction that had taken place after waking. Thus, in the latter instances, the patients had not slept since their previous interaction with the nurses.

Nurses were observed to initiate 79% (n128) of the interactions that occurred with patients who had

wakened. Of these, 67% (n86) were classified as being task-initiated, which included offers of services to patients. Nurses were observed to approach wakeful patients, adjust their bed covers, accompany patients to the toilet and, in the case of male patients, remove used urinals. Offers of service were, in the main, offers of a cup of tea or drugs, or offers of help - such as accompanying patients to the toilet as mentioned above. In most instances no attempt was made by the nurses to explore with the patients how they were feeling or whether they were finding it difficult to get back to sleep and if so, to elicit any underlying causes of such difficulty. Even when patients appeared to imply a difficulty in this respect, thus providing an opportunity for the nurses to pursue this line of conversation the latter either failed to recognise the opening or chose to ignore it. The nurses' solution with respect to sleepless patients frequently appeared to be to offer a cup of tea.

Examples:

1.

Nurse: "What are you doing awake? Get yourself to sleep."

Patient: "That's easier said than done."

Nurse: "Do you want a cup of tea?"

Patient: "Please."

(Nurse went to make tea which she brought to the patient)

Nurse: "There now. O.K.?"

Patient: "That was quick. Thank you."

Nurse: "O.K."

2.

Nurse: "Hello. Can you not sleep? Do you want a cup of tea?"

Patient: "That would be smashing. I'll be glad to get home for a decent sleep.

(Nurse went to make tea which she brought to the patient)

Nurse: "Here you are."

Patient: "Thanks."

In such instances as quoted above where patients expressed (admittedly indirectly) difficulty in sleeping, these verbal cues were not picked up by the nurses. In instances where the cause of wakefulness was apparently pain or discomfort the interactions that occurred were again relatively brief, the nurses failing to spend time talking to and reassuring the patients. Having taken measures aimed at increasing the patients' physical comfort, nurses seemed to consider their role to have been fulfilled.

Example:

Nurse: "Alright? Do you need the oxygen?"

Patient: "Yes. I'm a bit breathless. Could I have it for a while?"

(Nurse supplied the patient with face mask and switched on the oxygen supply)

Nurse: "There now. Is that O.K.?"

Patient: "Ah-ha."

Pain, dyspnoea or other physical discomfort are likely to be distressing and anxiety-evoking, especially during the night. Nurses seem to see their role as being largely related to ensuring patients' physical comfort, but this is only part of the problem. There is a need to consider the psychological effects of physical discomfort which, although they will probably be alleviated by increasing physical comfort, are also likely to be further reduced if nurses spend some time with the patients, encouraging their expression of fears and axieties, and responding by offering appropriate explanations and other words of reassurance. Only 7% (n6) of the interactions which were task-initiated or task-related included any conversation related to the patients' illnesses or their worries and anxieties.

Twelve per cent (n15) of nurse-initiated interactions

during the night simply involved the nurses approaching wakeful patients, enquiring as to whether they were alright and, having been assured that this was the case by the patients, terminating the interaction.

Examples:

1.

Nurse: "Alright Mrs --?"

Patient: "Yes thanks."

Nurse: "Try and get back to sleep again."

2.

Nurse: "Are you alright?"

Patient: "Yes, I'll be fine. It's just this chesty cough giving me a bit of trouble."

However, as may also have been the case with similar interactions that occurred prior to settled patients having got to sleep, people may say that they are alright yet further questioning and provision of an opportunity to talk may reveal underlying problems. In the second example quoted above it could be argued that although the patient had said he would be alright, his qualifying statement was an indication that all in fact was not well and that indirectly he was seeking some form of nursing intervention which might

subsequently have made it easier for him to sleep. Again, the comment might be made that nurses need to be more alert and responsive to the verbal cues that patients present.

A further 4% (n5) of nurse-initiated interactions during the night were classified as taking the form of advice from nurses to patients. The advice given in each instance was to patients who were either leaning out of bed reaching over to their lockers, or who were in the process of getting out of bed. The advice was to take care.

Example:

(The patient was leaning out of bed, reaching over to her locker)

Nurse: "Careful now. Mind you don't fall out. What are you doing anyway?"

Patient: "Just getting my watch to see what time it is."

Nurse: "It's nearly two o'clock. You gave me a fright. I thought you were going to fall out."

Patient: "No."

Speculating, it is possible that such actions by patients as described above are intended to draw nurses' attention to the fact that patients are awake and would welcome

an opportunity to talk to the nurses. However, it was noticeable that in each of these interactions there was failure on the part of the nurses even to ask patients if they were alright.

The remaining 17% (n22) of interactions which nurses initiated at this time were classed as being of an incidental nature, taking the form of a brief exchange.

Patients were observed to initiate only 21% (n34) of the interactions that occurred during the night. Of these, 85% (n29) were requests for nursing service - drugs for pain relief, assistance to get out of bed, a cup of tea, an extra blanket - while the remainder were of an incidental nature. Of those interactions which were requests for nursing service, subsequent conversation was entirely task-related in 90% (n26), with patients' requests being granted. Conversation pertaining to patients' illnesses featured in 7% (n2), and family matters in 3% (n1). It was the patients in each instance who brought up the subject of illness or family, and the nurses subsequently responded by engaging in conversation related to these matters, sitting by the patients' bedsides to do so. One elderly patient who had initially asked a nurse if she would sit with him while he had a cigarette (for reasons of safety) asked the nurse if she had seen his photographs.

In response to the interest shown by the nurse he proceeded to show her his photographs and they chatted for several minutes about his family who were featured in the snaps. While it is difficult to assess the effectiveness of interactions of this nature, it might seem reasonable to assume that having an opportunity to talk about such matters to a seemingly interested party must be beneficial to the patient who is not sleeping.

In the majority of instances, patients were awake for less than half an hour prior to nurses initiating interactions, although 15% (n19) of nurse-initiated interactions did not occur until patients had lain awake for longer than this, with 2% (n2) not occurring until the period of wakefulness had exceeded one hour. In the case of patient-initiated interactions, 17% (n5) of the requests for nursing service did not occur until after more than half an hour of wakefulness, with 3% (n1) being delayed for longer than one hour.

Of all the interactions that occurred with wakeful patients 55% (n89) were of less than one minutes' duration. Forty per cent (n64) lasted for between one and two minutes, while only 5% (n9) extended beyond two minutes' duration. In terms of the total duration of all the interactions that each wakeful patient had with the nurses during the night, this was found to be less than five minutes on 84% (n108) of the disturbed

nights when interaction occurred. (A summary of the interactions that occurred during the night is given in Appendix XVII.)

The effectiveness of interactions is difficult to quantify, but measured in terms of the time taken by patients to get back to sleep following interactions, it was found that on 86% (n93) of the 108 occasions when periods of wakefulness were experienced patients returned to sleep after interacting with the nurses. On 69% (n64) of these occasions patients were asleep within half an hour of termination of the interactions, and on95% (n84) within one hour. In all these instances the patients were asleep within one and a half hours. Following interactions in conjunction with 14% (n13) of the periods of wakefulness that occurred the patients remained awake, obtaining no further sleep. The patients had, in effect, finally wakened, and in 93% (n12) of these instances the duration of the period of wakefulness (during which no further interactions took place) prior to the nurses beginning their morning routine was less than one hour, and in no instance exceeded one and a half hours.

5.5 In the morning

During the mornings of the study a total of 264 interactions were observed and recorded, 94% (n248) of these being initiated by the nurses.

Of the nurse-initiated interactions, 94% (n233) were found to be task-initiated, 5% (n12) were of an incidental nature, and 1% (n3) illness-related. All fifty patients interacted with the nurses at least once on each of the three mornings of their inclusion in the study. Thus, 150 or 57% of all morning interactions were 'first' morning interactions, and of these, 96% (n144) were nurse-initiated. (See Appendix XVIII).

Prior to 68% (n98) of first morning interactions initiated by nurses the patients concerned were already awake, either having wakened spontaneously or wakened as a result of disturbance caused by other patients or the nurse going about their morning work. Patients had been awake for longer than half an hour prior to 25% (n24) of these interactions and for longer than one hour prior to 8% (n8). The remaining 32% (n46) of nurse-initiated first morning interactions were observed to occur after the nurses had roused the patients either to offer a cup of tea, for physiological observations, drug administration, or in conjunction with specimen collection. (See Appendix XVIII.)
Whilst no patient overtly complained about having been wakened, subjectively one got the impression on a number of occasions that patients were not too happy to have been disturbed.

Examples:

1.

Nurse: "Mrs --. Mrs --."
(Patient stirred)
"Good morning. Do you want a cup of tea?"

Patient: "No."

Nurse: "Nothing at all? Hot water perhaps? Milk?"

Patient: "No thanks."

2.

Nurse: "Good morning."
(Patient stirred)
"How are you this morning?"

Patient: "Tired."

Nurse: "Cup of tea?"

Patient: "No thank you."

Nurse: "Did you not sleep well?"

Patient: "Not too badly, but I could have slept on this morning."

Of those patients who were wakened only to be offered a cup of tea, 50% (n19) were observed to have no further interactions with the nurses in conjunction with treatment or care. As has been suggested previously, one might question the need to waken patients just for a cup of tea, particularly in the light of the relatively high proportion of these patients who, when

asked about the appropriateness of the time of morning waking had said they would have preferred to have been allowed to sleep on.

Only 6% (n16) of all morning interactions were initiated by the patients, and these were either requests for nursing service or were of an incidental nature.

The majority of morning interactions were of short duration, termination of 99% (n261) occurring within two minutes.

Only four morning interactions included any conversation pertaining to the patients' illnesses and only one related to a patient's anxieties. All these interactions were of less than two minutes' duration, and subjectively it is open to question as to whether or not patients received the reassurances they were seeking.

Examples:

1.

Nurse: "How are you this morning?"

Patient: "Not bad. I've still got this funny feeling in my stomach - not exactly pain, but a sort of ache. Those tablets don't seem to do much good."

Nurse: "Maybe the tests will find out what's wrong."

Patient: "I hope so."

2.

Nurse: "Good morning. Cup of tea?"

Patient: "Yes please."

Nurse: "How are you feeling this morning?"

Patient: "O.K. I think. I'm a bit worried about going to .....Infirmary today."

Nurse: "I'm sure you are, but at least you'll get things sorted out once they know what's what."

Patient: "Yes."

(Cup of tea given to patient)

"Thank you."

The subject of the previous night's sleep featured in only 12% (n32) of morning interactions, either being brought up by the nurses or by patients. It is perhaps surprising that this subject did not feature more frequently as nurses, by enquiring of patients how well (or otherwise) they slept, could obtain valuable information - namely the patients' own assessments of their sleep, which sleep researchers (16,41) regard as important in sleep evaluation. Also, if patients felt that they had not had a good sleep further enquiry could help to elicit any underlying reason for the poor sleep and steps taken to try and ensure that identified sleep-disturbing factors be alleviated the following night. Patients expressed satisfaction with their sleep on 75% (n24) of the occasions when the subject featured

in interactions, but dissatisfaction was expressed on the remaining occasions. However, on 88% (n7) of those occasions when dissatisfaction was expressed, nurses failed to take the opportunity to explore this with the patients.

Examples:

1.

Nurse: "How are you feeling this morning?"

Patient: "Not too bad. I didn't sleep very well though."

Nurse: "Have you used that bottle?"

Patient: "Ah-ha."

(Nurse removed the used urinal and the interaction was terminated)

2.

Nurse: "Feeling alright?"

Patient: "Not bad thanks."

Nurse: "Have you slept well?"

Patient: "No - that sleeping draught didn't seem to work."

Nurse: "It usually does - it's quite a good one."

Only one interaction included any discussion as to the possible factors contributing to the difficulty that

had been experienced in sleeping. In this instance the problem appeared to be anxiety about impending investigations. But while such discussions may help to alleviate anxieties, it is argued in retrospect that the reassurance given in this instance was rather belated. Had the nurses been alert and responsive to the fact that the patient was having difficulty in sleeping during the night, the problem could have been investigated at that time and the patient thereby assisted to obtain a better sleep.

Another patient who was observed by the researcher to have lain awake for most of the night but who had not received any attention from the nurses revealed in the morning (when a nurse commented that she seemed not to have slept very well) that she had spent the best part of the night thinking about a friend whose husband had recently died and was being buried that morning. Again, in retrospect, it could be argued that an opportunity to talk to the nurses during the night might well have helped that patient to sleep better subsequently. It was however noted that even when this patient had highlighted the problem in the morning, the nurse to whom she was talking chose not to pursue this topic with her:

Nurse: "You haven't had a very good night have you?"
Patient: "No. I can't stop thinking about my friend. Her husband died on Thursday and is getting

buried today. I think it's because I'm in here and won't be able to go to the funeral that I'm thinking so much about it."
(The interaction was then terminated).

5.6 Summary

Of the 924 interactions observed and recorded, 87% (n805) were initiated by nurses, and of these 82% (n664) were initiated in conjunction with nursing tasks performed for patients. Forty nine per cent (n58) of patient-initiated interactions were requests for nursing service. In terms of all interactions, over three quarters were task-initiated, requests for nursing service from patients, or were interactions that subsequently involved task-related conversation. Only 21% (n194) were in no was related to physical aspects of care. Few of the remaining interactions included conversation which was related to patients' illnesses, their worries and anxieties, or to family matters.

Less than 1% of interactions extended beyond five minutes' duration, and all that did so involved not the night nurses who were working in the wards, but either the day duty sister who had not yet gone off duty or a senior nursing member of the night staff who was visiting the ward.

Three quarters of those patients who had said they had experienced difficulty in getting to sleep had no contact with the nurses during this time, and when interactions did occur no attempt appeared to be made by the nurses to explore with the patients how they were feeling or to try and elicit the possible reasons for their difficulties.

During 68% of the observed periods of wakefulness during the night no interactions took place between the wakeful patients and the nurses. The interactions that did occur were largely task-related, with an apparent lack of consideration on the part of the nurses for patients' psychological needs.

The total amount of verbal contact each wakeful patient had with the nurses during the course of disturbed nights when interactions did occur was less than five minutes' duration during 84% of such nights.

The subject of the previous night's sleep featured in only 12% of morning interactions, and in all instances when patients expressed dissatisfaction with their sleep this was ignored by the nurses. In terms of all the interactions that occurred during the course of the study, sleep (or the patients' inability to sleep) was mentioned in only 6% of interactions, but as was the case with the morning interactions that featured this topic,

nurses did not pursue the topic. Had they done so, patients' underlying problems may have been revealed and measures could then have been taken to try and resolve these. At the very least, simply having an opportunity to talk to the nurses may have helped patients to obtain a better night's sleep.

6. PATIENTS' OPINIONS

6.1 Introduction

It would seem that many patients were unable to obtain what for them was a normal amount of sleep, yet relatively few called for the nurses during the times they were finding it difficult to sleep. This chapter, using information obtained during the initial interviews with patients examines:

a) patients' opinions regarding the importance of sleep;
b) patients' reasons for calling the nurses during the night;
c) patients' opinions of the night nurses' job;
d) whether or not patients consider there to be sufficient opportunity to talk to the nurses at night.

6.2 The importance of sleep

When interviewed initially, the patients were asked if they considered sleep to be important. Ninety four per cent were of the opinion that sleep is important for both physical and mental functioning, and many of these individuals recognized some of the effects of lack of adequate sleep, maintaining that this results in irritability, poor concentration, lack of energy and a general feeling of being 'washed out'. Yet clearly,

not all patients were obtaining what for them was a normal amount of sleep each night, with three quarters of the sample accruing a sleep deficit over the course of the three nights of their inclusion in the study. There were occasions when patients lay awake for varying lengths of time before the nurses approached them, and on almost twothirds of the occasions when patients wakened during the night these periods of wakefulness were either disregarded by the nurses or the nurses failed to recognize that the patients had wakened. The patients themselves took the initiative and called for a nurse on only a quarter of the occasions when periods of wakefulness were observed.

6.3 Justification for calling a nurse

The literature review suggested that patients only call for the nurse when they have a specific physical need (1,5). The patients in this study were therefore asked: "If you were unable to sleep what would make you decide to call for the nurse?" Without exception, it was said that they would only call for the nurse if they had some sort of physical need.

Examples:

i) "If I had pain, but I don't really like to bother them you know."

ii) "If I had my palpitations. I wouldn't call if I simply couldn't sleep."

iii) "No, I wouldn't bother them at all. There's some who call the nurse for any little thing, but they've enough to do. Maybe I'd call if I felt really ill, but only then."

Indeed, analysis of the patient-initiated interactions revealed that 85% of these were initiated to request some form of nursing service. No patient initiated an interaction specifically to complain about an inability to sleep.

6.4 The night nurses' job

It may be that patients - particularly low dependency patients - consider that night nurses have enough to do without being troubled by their inability to sleep? The patients were therefore asked for their opinion of the night nurses' job - did they consider it to be more or less difficult than that of nurses on day duty? This, it was hoped, would provide an insight as to the reason(s) underlying the reluctance on the part of patients to call for the nurses when they couldn't sleep in the light of their recognition of the importance of adequate sleep.

Only 16% of the sample considered the night nurses' job

to be more difficult than that of nurses on day duty.

Examples:

i) "Patients' illnesses often come to a head at night, yet there are less staff to cope with this."

ii) "Patients are often restless at night. There may be new admissions to the ward, and there are fewer staff."

iii) "The nurses are working unsocial hours. The desire to sleep has to be overcome."

iv) "Night work is always more difficult - you have a desire to sleep."

Compared with that of nurses on day duty, the night nurses' job was considered less difficult by 38% of the sample.

Examples:

i) "There's not as much to do. The patients are usually sleeping."

ii) "Not as much to do at night. There's not the same amount of routine work - maybe early in the night and again in the morning, but not during the night."

iii) "The ward is often quieter as most patients are

sleeping or lying quietly."

iv) "Patients are usually sleeping at night. There may be admissions, but it's really less demanding."

It was appreciated by 42% of the sample that the night nurses could sometimes be very busy yet at other times there might be slack periods.

Examples:

i) "It can sometimes be busy - ill patients, new admissions, fewer staff on duty at night. Yet at other times the ward can be very quiet."

ii) "It can be as busy at night as during the day."

The remaining 4% of the sample did not feel able to answer the question.

Interpretation of these responses is inconclusive. Although 80% of the sample either regarded the night nurses' job to be less difficult than that of nurses on day duty or recognized that it could vary depending on the number of ill patients, new admissions, and the number of staff on duty, the fact remains that patients were nevertheless reluctant to call on the nurses when difficulty was experienced in relation to sleeping other

than in instances where physical factors (such as pain) appeared to underlie this difficulty. Several of those who regarded the night nurses' job to be more difficult felt that this was due to there being a desire to sleep which must be overcome and that this in turn contributes to stress. But this being the case, it could be argued that those patients who feel this way should have fewer qualms about calling for the nurses. The resultant activity could be seen as helping nurses to overcome any such desire to sleep.

6.5 Opportunity to talk to the night nurses

When asked if they felt there was enough opportunity to talk to the night nurses, 96% of the sample were of the opinion that there was. The remaining 4% agreed that while there was sometimes sufficient opportunity, at other times - because the nurses were busy attending to ill patients or newly admitted patients - such opportunities were limited.

6.6 Summary

Although many patients failed to obtain a normal amount of sleep in hospital during the course of the study, the majority felt that adequate sleep was important. Only 16% of the sample were of the opinion that the night nurses' job was more difficult than that of nurses on

day duty, and 96% felt there was sufficient opportunity to talk to the nurses at night.

That all patients said they would only call for the nurses during the night if they couldn't sleep if they had a specific need probably explains the relatively low incidence of patient-initiated interactions during the night. Having said this, the onus of responsibility for initiating interactions with patients who are unable to sleep might therefore rest with the nurses. This in turn could call for a greater awareness of and responsiveness to patients who are experiencing difficulty in sleeping.

7. SUMMARY AND CONCLUSIONS

7.1 Sleep patterns

In the first instance, the aim of the study was to determine whether low dependency patients experience interruption of their normal sleep patterns during hospitalization. The data collected did not support the hypothesis that low dependency patients are able to obtain what for them is a normal quantity and quality of sleep during hospitalization.

The majority of the sample were found to experience inability to obtain a normal quantity and quality of sleep each night. Taken over the three nights of each patient's inclusion in the study, three quarters of the sample accrued a sleep deficit, and even when day-time sleep was taken into account over half the sample still had a sleep deficit. (Dodds (1) found that 61% of her sample said they had difficulty in obtaining a normal amount of sleep in hospital.)

The reduction in sleep-time in the present study can be accounted for in part by the difficulty that was experienced in getting to sleep at the beginning of the night by 48% of the sample on at least one night.

In terms of the total number of study nights (N150), this difficulty in getting to sleep occurred on 25% of the nights, the time taken to get to sleep being in excess of one hour on 95% of these nights, and on 22% in excess of two hours.

Secondly, the reduction in sleep-time can be partly accounted for by the frequency and duration of awakenings experienced during the nights of the study. Night awakenings were experienced by 98% of the sample on at least one night, with 62% experiencing interruption of their sleep at least once on each of the three nights of their inclusion. In effect, patients' sleep was disturbed on 85% of the study nights. Compared with patients' normal sleep patterns, the number of awakenings per night was increased on 33% of the disturbed nights. Patients were said to have experienced difficulty in getting back to sleep on 44% of the disturbed nights, taking in excess of one hour to do so on 95% of these nights and over two hours on 45%

Finally, no patient slept or was allowed to sleep on beyond 7.00 a.m. on any morning.

These three aspects - (1) initial difficulty in getting to sleep, (2) the frequency and duration of night

awakenings, and (3) early morning waking - either singly or in combination with one another, made it difficult for the majority of patients to obtain a normal quantity and quality of sleep.

7.2 Sleep-disturbing factors

In contrast to Dodds (1), no relationship was found between patients' inability to obtain a normal amount of sleep and the duration of current stay prior to inclusion in the study. But as Dodds acknowledged, the improvement in sleep may have been related to patients' physical conditions which probably improved the longer they had been in hospital. In the present study however, all patients had already spent a minimum of three nights in the ward prior to their inclusion, and the physical condition of each was such that they were all capable of a relatively high degree of self-care. In support of Dodds' findings, there did not appear to be any association between patients' previous experiences of hospitalization and inability to obtain a normal night's sleep.

Physical, psychological and environmental factors were found to have contributed towards patients' sleeping difficulties, all of which have implications for nursing intervention. Yet on half the occasions when patients were said to have experienced difficulty

in getting to sleep and/or had wakened during the night and had subsequently found it difficult to get back to sleep the patients were of the opinion that the nurses had not been aware of their difficulties. (Similarly, over half the patients interviewed by Dodds (1) felt the nurses had been unaware of their sleeping difficulties.)

7.3 Nurse-patient interactions

In the majority of instances when patients found it difficult to get to sleep or to get back to sleep having wakened during the night, the relatively few patient-initiated interactions that occurred were in the form of requests for nursing services to meet physical needs. Patients' requests were always granted, but no attempts made by the nurses to provide opportunities for patients to express their feelings, or to explore with patients how they were feeling.

Nurse-initiated interactions at these times were mainly in the form of offers of service - usually a cup of tea - or a general type of enquiry as to whether the patients were alright. The spontaneous offering of a cup of tea to wakeful patients appeared to be the nurses' solution as to what to do for patients who were unable to sleep. By making such an offer, nurses possibly felt that at least they were doing something

which, if it did nothing else, would perhaps be seen to be demonstrating a caring approach. Indeed, a warm drink at such times is often very welcome and may well help the recipient to get to sleep subsequently. But, in addition to offering and providing warm drinks, a few minutes spent with wakeful patients may have facilitated more interactions involving conversation pertaining to topics such as the patients' illnesses, family matters and other possible anxiety-evoking topics which, by their very nature, may make it difficult for the individual to sleep. It is also possible that people, when asked if they are alright, tend to answer in the affirmative, yet an enquirer who pursues the matter further may reveal underlying problems. This being the case, attempts can then be made either to resolve the problems or at least to allow full expression of these to a sympathetic listener which, in itself, may help. Talking about problems or worries to someone who appears to care might do much to encourage peace of mind which should then make sleep less difficult.

It is also noteworthy that three-quarters of the patients who had reported difficulty in getting to sleep had no contact with the nurses during this time. Similarly, during two-thirds of the periods of wakefulness observed during the night, no interactions occurred

between the wakeful patients and the nurses. This can partly be attributed to those patients who, while considering sleep to be important, did not regard inability to sleep a justifiable reason for calling the nurses - unless that inability was the result of some sort of physical needs such as a need for pain-relieving drugs. It was however, evident that a number of patients who considered that their difficulties in getting to sleep, or returning to sleep after having wakened during the night were due to physical factors, did not in fact call for the nurses. One can only speculate as to why this was the case, and suggest that a determining factor may be the degree of physical discomfort experienced. It is also possible that during the times patients were finding it difficult to sleep they felt that the nurses were busy attending to other patients whose needs - when compared with their own - appeared to be greater or more pressing.

Nurses frequently did not interact with patients who were experiencing difficulty in sleeping. In most instances when they did have contact with these patients the interactions were relatively brief and mainly task-related. This seems to call for a greater awareness of the needs of all patients. Admittedly, during the time that some of the sample were finding it difficult to sleep, it is possible that the nurses were

otherwise employed, attending to ill patients who were more highly dependent on nursing staff for physical care - a factor which was not investigated. However, it is argued that the needs of low dependency patients - which may be other than of a physical nature - also need to be recognised and nursing care appropriate to the meeting of these needs implemented.

Cognizance should also be taken of the reluctance of many patients to call for nursing attention. It may be the case that patients' reluctance to call for nursing attention when they are unable to sleep reflects their low expectations of the quality of night nursing care? Hence the view that many patients expressed - that they should not bother the nurse for seemingly trivial matters. It is arguable therefore, that improvment in nurses' readiness to respond to patients who are not sleeping may, in turn, lead to improvement in patients' expectations of night nursing care.

7.4 Recommendations for further research

It is suggested that further research in the area of sleep and the hospital patient is required. Nursing research in this area has been scanty and the studies carried out so far have been relatively small. Generalization of findings to the hospital population

at large is therefore not possible. The procuring of further data may serve to support the findings currently available which, as has been suggested, have implications for nursing care.

A more extensive study than those previously undertaken which investigates not only patients' sleep patterns and nurse-patient interactions at night, but which, in conjunction with this, also analyses how night nurses spend their time is envisaged. Clearly, more than one researcher would be required to collect such a vast amount of data.

A comparative study in which the sample population is comprised of both high and low dependency patients may provide additional useful data on the pattern and nature of interactions that night nurses have with their patients.

Determining the nature of the preparation of nurses for night duty - for example, what nurses are taught on the subject of sleep and sleep problems, and the contribution nurses can make towards assisting their patients to sleep - both in relation to nurses in training and also to trained and untrained nursing staff in the form of in-service education, may ultimately serve to improve the quality of night nursing care.

Sleep is an activity of living, and assisting patients to obtain what for them is a normal quantity and quality of sleep should be an integral part of any nurse's total patient care.

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APPENDIX I

THE NATURE OF SLEEP

There are two types of sleep which alternate in cyclic fashion:-

1. Orthodox sleep: also called synchronized sleep or S, and non-rapid eye movement (or non-REM) sleep;

2. Paradoxical sleep: also called desynchronized or dreaming sleep or D, and rapid eye movement (or REM) sleep.

There are four successive stages of orthodox sleep during which the E.E.G. waves change, becoming gradually larger and slower until stage IV is reached, at which point sleep is at its most profound. After seventy to ninety minutes from the onset of orthodox sleep there is a gradual progression back from stage IV through the earlier stages, but instead of waking the individual enters a phase of paradoxical sleep, which continues for ten to fifteen minutes. Once more, there is then a gradual descent through the stages of orthodox sleep.

The same cycle is repeated four to six times during the

night, though later in the night the length of the orthodox sleep phase decreases with stages III and IV predominating, while the length of the paradoxical sleep phase increases. Orthodox sleep occupies about three quarters of a healthy adult's total sleep period, paradoxical sleep about a quarter.

Characteristics of types of sleep

Characteristic	Orthodox	Paradoxical
E.E.G. pattern	Slow waves	Low voltage, desynchronized rhythm
Eye movements	Absent except for transient rolling oscillations in very light sleep	Present
Muscle tone	Reduced	Abolished
Heart and respiratory rates	Steady, regular	Increased, irregular
Blood pressure	Sight fall	Moderate increase
Dreaming activity	Infrequent, fragmented, with poor recall	Frequent, vivid, with good recall

Reference: Kogeorgos J, Scott DF. Sleep and sleep disorders. The Practitioner 1980; 224: 717-721.

APPENDIX II

THE FUNCTIONS OF SLEEP

Data base	Functions of S	
Hints from physiology: Chemistry of sleep	Anabolism: macromolecules (RNA or protein) synthesis	Anabolism and synthesis of macromolecules to be used partially in the functions of D
Sleep deprivation	Prevent lethargy/ physical tiredness	
Sleep as a response	Restoration after exercise, pain or injury, or excessive catabolism	
Psychology of tiredness	Restoration after 'physical' tiredness	

	Functions of D	
Hints from physiology	Repatterning	
Sleep deprivation	Focus attention and keep out extraneous stimuli; maintain ego integrity; restore ability for new learning; repattern/ consolidate memories	Repair, reorganization, formation of new connections in cortex and the catecholamine systems ascending to cortex required
Long and short sleepers. Variable sleepers	Restoration after new learning and 'psychic strain' including anxiety and depression	
Age changes and pathological states	Restoration at times of new learning and at times of irritability and depression	

Data base	Functions of D	
Sleep as a response	Restoration of catecholamine systems; restoration after reticular stimulation or hypervigilance; restoration after new learning	for optimal attention mechanisms, secondary processes and self-guidance during waking.
Psychology of tiredness	Restore recent, subtle ego mechanisms and and secondary processes	
The dream	Shunting out for repair (during D) of certain brain systems necessary for flexible attention, subtle feedback regulated emotion, continued sense of self.	

S: synchronized/non-rapid eye movement (non-REM)/ orthodox sleep.

D: desynchronized/dreaming/rapid eye movement (REM)/ paradoxical sleep.

Reference: Hartmann EL. The functions of sleep. New Haven and London: Yale University Press, 1973; p 146.

APPENDIX III

PATIENT INTERVIEW SCHEDULE

(For initial interview)

Date:

Patient identification number:

Patient's sex:

Male	☐	(1)
Female	☐	(2)

1. Can you tell me the date you were admitted to this ward?

   SPECIFY: -- -- 19--

   So you've been in the ward for -- nights.

2. Is this the first time you've ever been a patient in hospital?

Yes	☐	(1)
No	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

If NO to Q2:

3. In total, including this time, how many times have you been a patient in hospital?

2	☐	(1)
3	☐	(2)
4	☐	(3)
5	☐	(4)
6	☐	(5)
7-10	☐	(6)
10	☐	(7)
D.K.	☐	(8)
N.R.	☐	(9)

To ALL respondents:

4. Can you tell me the main reason why you are in hospital?

SPECIFY:

Cardiac	☐	(1)
Respiratory	☐	(2)
Vascular	☐	(3)
Endocrine	☐	(4)
Nervous	☐	(5)
Digestive	☐	(6)
Renal	☐	(7)
D.K.	☐	(8)
N.R.	☐	(9)

5. Can you tell me your age?

Under 20	☐	(0)
20-29	☐	(1)
30-39	☐	(2)
40-49	☐	(3)
50-59	☐	(4)
60-69	☐	(5)
70-79	☐	(6)
80 or older	☐	(7)
D.K.	☐	(8)
N.R.	☐	(9)

6. Are you single...married...
widowed...separated...
divorced?

Single	☐	(1)
Married	☐	(2)
Widowed	☐	(3)
Separated	☐	(4)
Divorced	☐	(5)
D.K.	☐	(8)
N.R.	☐	(9)

I'd like to ask you a few questions now about your sleep at home:-

7. What time do you usually go to bed?

Before 9.00 p.m.	☐	(1)
9.00 p.m. - 9.59 p.m.	☐	(2)
10.00 p.m. - 10.59 p.m.	☐	(3)
11.00 p.m. - 11.59 p.m.	☐	(4)
12.00 a.m. - 12.59 a.m.	☐	(5)
1.00 a.m. or later	☐	(6)
D.K.	☐	(8)
N.R.	☐	(9)

8. Do you ever have any difficulty in getting to sleep at home?

Yes	☐	(1)
No	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

If YES to Q8:

9. How often do you have difficulty in getting to sleep at home?

Every night	☐	(1)
Most nights	☐	(2)
1-2 nights per week	☐	(3)
1-2 nights per month	☐	(4)
Rarely	☐	(5)
Variable	☐	(6)
D.K.	☐	(8)
N.R.	☐	(9)

10. For how long have you had the problem?

Less than 1 month	☐	(1)
1 month but less than 2 months	☐	(2)
2 months but less than 3 months	☐	(3)
3 months but less than 6 months	☐	(4)
6 months but less than 1 year	☐	(5)
1 year but less than 2 years	☐	(6)
2 years or longer	☐	(7)
D.K.	☐	(8)
N.R.	☐	(9)

11. What do you think causes your difficulty in getting to sleep?

SPECIFY all:

CODE 1st causes stated:

Physicel	☐	(1)
Environmental	☐	(2)
Social	☐	(3)
Psychological	☐	(4)
Physiological	☐	(5)
Other	☐	(6)
D.K.	☐	(8)
N.R.	☐	(9)

To ALL respondents:

12. Once you have decided to settle down, how long does it usually take you to get to sleep?

Less than 5 minutes	☐	(1)
5 - 14 minutes	☐	(2)
15 - 29 minutes	☐	(3)
30 - 44 minutes	☐	(4)
45 - 59 minutes	☐	(5)
1 hour but less than 2 hours	☐	(6)
2 hours or longer	☐	(7)
D.K.	☐	(8)
N.R.	☐	(9)

13. Do you ever have nights when you waken up during the night?

Yes	☐	(1)
No	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

If YES to Q13:

14. How often do you have nights when you waken up during the night?

Every night	☐	(1)
Most nights	☐	(2)
1-2 nights per week	☐	(3)
1-2 nights per month	☐	(4)
Rarely	☐	(5)
Variable	☐	(6)
D.K.	☐	(8)
N.R.	☐	(9)

15. How many times per night do you wake up?

1	☐	(1)
2	☐	(2)
3	☐	(3)
4	☐	(4)
5 or more	☐	(5)
Variable	☐	(6)
D.K.	☐	(8)
N.R.	☐	(9)

16. When you do waken, what is it that has usually caused you to waken?

SPECIFY all:

CODE 1st stated:

Physical	☐	(1)
Environmental	☐	(2)
Social	☐	(3)
Psychological	☐	(4)
Physiological	☐	(5)
Other	☐	(6)
D.K.	☐	(8)
N.R.	☐	(9)

17. When you have wakened, how long does it usually take you to get back to sleep?

Less than 5 minutes	☐	(1)
5 - 14 minutes	☐	(2)
15 - 29 minutes	☐	(3)
30 - 44 minutes	☐	(4)
45 - 59 minutes	☐	(5)
1 hour but less than 2 hours	☐	(6)
2 hours or longer	☐	(7)
D.K.	☐	(8)
N.R.	☐	(9)

18. Is there anything that helps you to get back to sleep?

Yes	☐	(1)
No	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

If YES to Q18:

19. What is it that helps you to get back to sleep?

SPECIFY all:

CODE 1st stated:

Physical	☐	(1)
Environmental	☐	(2)
Social	☐	(3)
Psychological	☐	(4)
Physiological	☐	(5)
Other	☐	(6)
D.K.	☐	(8)
N.R.	☐	(9)

To all respondents:

20. How many hours sleep do you usually have each night at home?

Less than 2 hours	☐	(1)
2 hours but less than 4 hours	☐	(2)
4 hours but less than 5 hours	☐	(3)
5 hours but less than 6 hours	☐	(4)
6 hours but less than 7 hours	☐	(5)
7 hours but less than 8 hours	☐	(6)
8 hours or more	☐	(7)
D.K.	☐	(8)
N.R.	☐	(9)

21. Do you get up at a set time most days?

Yes	☐	(1)
No	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

If YES to Q21:

22. At what time do you waken on these days?

Before 5.00 a.m.	☐	(1)
5.00 a.m. - 5.59 a.m.	☐	(2)
6.00 a.m. - 6.59 a.m.	☐	(3)
7.00 a.m. - 7.59 a.m.	☐	(4)
8.00 a.m. - 8.59 a.m.	☐	(5)
9.00 a.m. - 9.59 a.m.	☐	(6)
10.00 a.m. or later	☐	(7)
D.K.	☐	(8)
N.R.	☐	(9)

To ALL respondents:

23. When you don't have to get up at a set time, at what time do you finally waken?

Before 5.00 a.m.	☐	(1)
5.00 a.m. - 5.59 a.m.	☐	(2)
6.00 a.m. - 6.59 a.m.	☐	(3)
7.00 a.m. - 7.59 a.m.	☐	(4)
8.00 a.m. - 8.59 a.m.	☐	(5)
9.00 a.m. - 9.59 a.m.	☐	(6)
10.00 a.m. or later	☐	(7)
D.K.	☐	(8)
N.R.	☐	(9)

24. Do you ever take anything to help you to sleep? (PROMPT: for example, sleeping tablets)

Yes	☐	(1)
No	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

If YES to Q24:

25. What is it that you take to help you to sleep?

SPECIFY:

26. What difference do you feel that.....makes to the sleep you get?

SPECIFY:

27. How often do you take.....
to help you to sleep?

Every night	☐	(1)
Most nights	☐	(2)
1-2 nights per week	☐	(3)
1-2 nights per month	☐	(4)
Rarely	☐	(5)
Variable	☐	(6)
D.K.	☐	(8)
N.R.	☐	(9)

28. For how long have you been
taking.....at home?

Less than 1 month	☐	(1)
1 month but less than 2 months	☐	(2)
2 months but less than 3 months	☐	(3)
3 months but less than 6 months	☐	(4)
6 months but less than 1 year	☐	(5)
1 year but less than 2 years	☐	(6)
2 years or more	☐	(7)
D.K.	☐	(8)
N.R.	☐	(9)

<u>To ALL respondents</u>:

29. Do you ever sleep during the day
at home?

Yes	☐	(1)
No	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

If YES to Q29:

30. How often do you have a sleep during the day at home?

Every day	☐	(1)
Most days	☐	(2)
1-2 days per week	☐	(3)
1-2 days per month	☐	(4)
Rarely	☐	(5)
Variable	☐	(6)
D.K.	☐	(8)
N.R.	☐	(9)

31. For how long do you sleep on these occasions?

Less than ½ hour	☐	(1)
½ hour but less than 1 hour	☐	(2)
1 hour but less than 1½ hours	☐	(3)
1½ hours but less than 2 hours	☐	(4)
2 hours but less than 3 hours	☐	(5)
3 hours or more	☐	(6)
D.K.	☐	(8)
N.R.	☐	(9)

To ALL respondents:

32. Do you think that sleep is important?

Yes	☐	(1)
No	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

Can you say why?

SPECIFY:

I'd like now to get your views on one or two aspects of night time in the ward. There are no right or wrong answers - I'm just interested in your personal opinion.

33. When you can't sleep during the night, what makes you decide whether or not to call for a nurse?

SPECIFY:

34. Do you think the nurses on night duty have a more or a less difficult job than nurses on day duty?

More difficult	☐	(1)
Less difficult	☐	(2)
Variable	☐	(3)
D.K.	☐	(8)
N.R	☐	(9)

Can you explain why?

SPECIFY:

35. Do you feel you have as much opportunity as you would like to talk to the night nurses?

Yes	☐	(1)
No	☐	(2)
Variable	☐	(3)
D.K.	☐	(8)
N.R.	☐	(9)

If NO or VARIABLE TO Q35:

Why is that?

SPECIFY:

APPENDIX IV

PATIENT INTERVIEW SCHEDULE

(For use on three consecutive mornings)

Date:

Patient identification number:

1. What time did you settle down to sleep last night?

Before 9.00 p.m.	☐	(1)
9.00 p.m. - 9.59 p.m.	☐	(2)
10.00 p.m. - 10.59 p.m.	☐	(3)
11.00 p.m. - 11.59 p.m.	☐	(4)
12.00 a.m. - 12.59 a.m.	☐	(5)
1.00 a.m. or later	☐	(6)
D.K.	☐	(8)
N.R.	☐	(9)

2. Was this time about right for you?
(PROMPT: or would you have preferred to have settled down earlier or later?)

Yes	☐	(1)
Earlier	☐	(2)
Later	☐	(3)
D.K.	☐	(8)
N.R.	☐	(9)

3. Did you have any difficulty in getting to sleep?

Yes	☐	(1)
No	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

If YES to Q3:

4. What do you think made it difficult for you to get to sleep?

SPECIFY all:

CODE 1st stated:

Physical	☐	(1)
Environmental	☐	(2)
Social	☐	(3)
Psychological	☐	(4)
Physiological	☐	(5)
Other	☐	(6)
D.K.	☐	(8)
N.R.	☐	(9)

5. Do you think the nurses were aware that you were having difficulty in getting to sleep?

Yes	☐	(1)
No	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

Why was that?

SPECIFY:

To ALL respondents:

6. About how long did it take you to get to sleep?

Less than 5 minutes	☐	(1)
5 - 14 minutes	☐	(2)
15 - 29 minutes	☐	(3)
30 - 44 minutes	☐	(4)
45 - 59 minutes	☐	(5)
1 hour-1 hour 59 minutes	☐	(6)
2 hours or longer	☐	(7)
D.K.	☐	(8)
N.R.	☐	(9)

7. Did you wake up at all during the night?

Yes	☐	(1)
No	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

If YES to Q7:

8. How many times did you wake up?

1	☐	(1)
2	☐	(2)
3	☐	(3)
4	☐	(4)
5 or more	☐	(5)
D.K.	☐	(8)
N.R.	☐	(9)

9. What do you think caused you to waken?

SPECIFY all:

CODE 1st stated:

Physical	☐	(1)
Environmental	☐	(2)
Social	☐	(3)
Psychological	☐	(4)
Physiological	☐	(5)
Other	☐	(6)
D.K.	☐	(8)
N.R.	☐	(9)

10. Did anything make it difficult for you to get back to sleep?

Yes	☐	(1)
No	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

If YES to Q10:

11. What was it that made it difficult for you to get back to sleep?

SPECIFY all:

CODE 1st stated:

Physical	☐	(1)
Environmental	☐	(2)
Social	☐	(3)
Psychological	☐	(4)
Physiological	☐	(5)
Other	☐	(6)
D.K.	☐	(8)
N.R.	☐	(9)

12. Do you think the nurses were aware that you were awake and were finding it difficult to get back to sleep?

Yes	☐	(1)
No	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

Why was that?

SPECIFY:

If YES to Q7:

13. Did anything help you to get back to sleep?

Yes	☐	(1)
No	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

If YES to Q13:

14. What was it that helped you to get back to sleep?

SPECIFY all:

CODE 1st stated:

Physical	☐	(1)
Environmental	☐	(2)
Social	☐	(3)
Psychological	☐	(4)
Physiological	☐	(5)
Other	☐	(6)
D.K.	☐	(8)
N.R.	☐	(9)

If YES to Q7:

15. For how long do you think you were awake during the night?

Less than 5 minutes	☐	(1)
5 minutes - 14 minutes	☐	(2)
15 minutes - 29 minutes	☐	(3)
30 minutes - 44 minutes	☐	(4)
45 minutes - 59 minutes	☐	(5)
1 hour - 1 hour 59 minutes	☐	(6)
2 hours or longer	☐	(7)
D.K.	☐	(8)
N.R.	☐	(9)

To ALL respondents:

16. What time did you finally waken this morning?

Before 5.00 a.m.	☐	(1)
5.00 a.m. - 5.29 a.m.	☐	(2)
5.30 a.m. - 5.59 a.m.	☐	(3)
6.00 a.m. - 6.29 a.m.	☐	(4)
6.30 a.m. - 6.59 a.m.	☐	(5)
7.00 a.m. - 7.29 a.m.	☐	(6)
7.30 a.m. or later	☐	(7)
D.K.	☐	(8)
N.R.	☐	(9)

17. Was this time about right for you?
(PROMPT: or would you have preferred to have slept longer?)

Yes	☐	(1)
Longer	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

18. Did you wake up naturally?
(PROMPT: or did something cause you to waken?)

Yes	☐	(1)
No	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

If NO to Q18:

19. What was it that wakened you?

SPECIFY all:

CODE 1st stated:

Physical	☐	(1)
Environmental	☐	(2)
Social	☐	(3)
Psychological	☐	(4)
Physiological	☐	(5)
Other	☐	(6)
D.K.	☐	(8)
N.R.	☐	(9)

To ALL respondents:

20. How many hours sleep did you have last night?

Less than 1 hour	☐	(0)
1 hour - 1 hour 59 minutes	☐	(1)
2 hours - 3 hours 59 minutes	☐	(2)
4 hours - 4 hours 59 minutes	☐	(3)
5 hours - 5 hours 59 minutes	☐	(4)
6 hours - 6 hours 59 minutes	☐	(5)
7 hours - 7 hours 59 minutes	☐	(6)
8 hours or more	☐	(7)
D.K.	☐	(8)
N.R.	☐	(9)

21. Was the sleep you had last night to your satisfaction?

Yes	☐	(1)
No	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

If NO to Q21:

22. Can you explain why not?

SPECIFY:

To ALL respondents:

23. Did you take anything to help you to sleep last night?

Yes	☐	(1)
No	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

If YES to Q23:

24. What was it that you took to help you to sleep last night?

SPECIFY:

25. At what time did you take it/them?

Before 10.00 p.m.	☐	(1)
10.00 p.m. - 10.29 p.m.	☐	(2)
10.30 p.m. - 10.59 p.m.	☐	(3)
11.00 p.m. - 11.29 p.m.	☐	(4)
11.30 p.m. - 11.59 p.m.	☐	(5)
Midnight or later	☐	(6)
D.K.	☐	(8)
N.R.	☐	(9)

26. Was this time about right for you?
(PROMPT: or would you have preferred to have taken it/them earlier or later?)

Yes	☐	(1)
Earlier	☐	(2)
Later	☐	(3)
D.K.	☐	(8)
N.R.	☐	(9)

If NO to Q23:

27. Would you have liked something to help you to sleep last night?

Yes	☐	(1)
No	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

To ALL respondents:

28. Did you have any sleep during the day yesterday?

Yes	☐	(1)
No	☐	(2)
D.K.	☐	(8)
N.R.	☐	(9)

If YES to Q28:

29. In total, how much sleep did you have during the day yesterday?

Less than ½ hour	☐	(1)
½ hour but less than 1 hour	☐	(2)
1 hour but less than 1½ hours	☐	(3)
1½ hours but less than 2 hours	☐	(4)
2 hours but less than 2½ hours	☐	(5)
2½ hours but less than 3 hours	☐	(6)
3 hours or more	☐	(7)
D.K.	☐	(8)
N.R.	☐	(9)

APPENDIX V

RECORDING SHEET

A		B								C	
1	2	3	4	5	6	7	7	8	9	10	
T	W/S	No.	T	W/S	TL	Init	Inv	NTs	Dur	R.	C.

Key to recording sheet

A Observation of sleep

1. T : time
2. W/S : patient awake (W) or asleep (S)

B Observation of nurse-patient interactions

3. No. : number of interaction
4. T : time interaction commenced
5. W/S : patient's waking/sleeping history:

   Codes:

   a : not yet settled for the night

   b : awake, but settled for the night

   c : asleep

   d : awake, but had slept since last interacting with nurse

   e : awake and had not slept since last interacting with nurse

   f : awake - morning

6. TL : time lapse since patient wakened or last interacted with nurse to present interaction
7. Init: who initiated the interaction

   Inv : others involved in the interaction

Codes:

1 : patient

2 : enrolled nurse

3 : nursing assistant

4 : student nurse

5 : pupil nurse

6 : staff nurse

7 : night sister

8 : nursing officer

9 : other (specify)

8. NTs : nursing tasks performed during interaction

Codes:

1 : tidying bed, including making patient comfortable

2 : assisting patient with excretory functions

3 : drug administration

4 : physiological observations

5 : provision of drinks

6 : tasks related to maintaining records - eg. recording fluid intake/output

7 : specimen collection

8 : tasks related to patient's immediate environment - eg. tidying locker, opening/closing window

9 : other - eg. supplying tissues, supervising patient smoking

9. Dur : duration of interaction (minutes)

C Classification of interactions

10. R. : researcher's classification of interaction

C. : independent coder's classification of interaction.

Codes:

1 : request by patient for nursing service

2 : request by nurse for information

3 : advice/instruction/information from nurse to patient

4 : task-initiated/task-related

5 : illness-related

6 : related to patient's social/psychological problems

7 : social

8 : incidental

9 : sleep-related

APPENDIX VI

CLASSIFICATION OF INTERACTIONS

In order to facilitate classification of the conversations that occurred during nurse-patient interactions nine categories were devised:-

1. Request by patient for nursing service;
2. Request by nurse for information;
3. Advice/instruction/information from nurse to patient;
4. Task-initiated/task-related;
5. Illness-related;
6. Related to patients' social/psychological problems;
7. Social;
8. Incidental;
9. Sleep-related.

1. Request by patient for nursing service

Patient requests some form of nursing service from nurse. Applies to interactions in which patient calls for the nurse who then asks patient what he/she wants, following which the patient then requests service, treatment, or expresses a need.

Example:

Patient: "Nurse."

Nurse: "Yes. What is it?/What's the matter?"

Patient: "Do you think I could have.....?"

That the nurse requested information from the patient does not place the conversation in category 2 as the nurse's request was merely in response to the patient's call.

2. Request by nurse for information

Nurse requests specific information from the patient, other than in response to the patient's call (as explained above). Does not apply to information requested by the nurse in conjunction with nursing tasks being performed for or services being offered to the patient. The casual "Hello, how are you?" is not included in this category either, but in category 8 as described below.

3. Advice/instruction/information from nurse to patient

Nurse offers advice, instruction or information to the patient. For example, informs the patient about arrangements that have been made for a particular

investigation and gives instructions about dietary restrictions. Advice, instruction or information which pertains to nursing tasks being performed for the patient is not included in this category, but in category 4 as it is considered to form an integral part of the conversation related to the tasks being performed.

4. Task-initiated/task-related

Any conversation related to tasks performed by the nurse for the patient. Includes offers of service - such as the offer of a cup of tea. Explanation or information given to the patient about a nursing procedure/task about to be performed and/or instruction or advice given during a procedure/task are all considered to be an integral part of the procedure/task itself and such conversation should therefore be placed in this category.

If the nurse approaches the patient and begins to perform a certain task or carry out a procedure - such as checking the patient's blood pressure - but does not explain to the patient about this but instead engages him in incidental conversation (see category 8), the conversation is coded initially as category 4 as the interaction was task-initiated, and then also as category 8 (or other relevant category).

5. Illness-related

Conversation specifically related to the patient's illness. May include conversation related to investigations, diagnosis, prognosis, treatment, etc. If the patient expresses worries/anxieties in relation to his illness and conversation on this aspect subsequently takes place, the conversation is initially coded as category 5 and then as category 6 (see below).

6. Related to patient's social/psychological problems

Conversation in which the patient's worries, anxieties, problems, etc. feature.

7. Social

Conversation pertaining to the patient's life outside hospital. For example, home, family, work, hobbies, holidays, etc. If problems or worries pertaining to any of these or similar topics are talked about the conversation is also classed as category 6.

8. Incidental

Incidental conversation. For example, conversation about the weather, items of news, television programmes.

Included in this category are the casual greetings such as "Hello, how are you?" or "How are you feeling?" Such questions are often used as a means of opening conversations and are therefore not considered to be designed to elicit specific information (category 2), or as being illness-related (category 5). If however discussion then follows which does pertain to illness, problems, social topics, etc., the conversation is coded initially as category 8 and then allocated additional code(s) as appropriate.

9. Sleep-related

Conversations in which the subject of the patient's sleep features.

APPENDIX VII

NURSES WORKING IN WARDS DURING THE STUDY OF NURSE-PATIENT INTERACTIONS

Staff grade	Female wards	Male wards	Total
Sister	0	2	2
Staff nurse	1	2	3
Enrolled nurse	6	8	14
Student nurse	7	3	10
Pupil nurse	3	2	5
Nursing assistant	8	11	19
	25	28	53

APPENDIX VIII

DEPENDENCY CRITERIA USED FOR SELECTION OF PATIENTS

Category A: Bedfast/chairfast/totally helpless
(dependent on nursing staff for all services)

1. Confined to bed/chair
2. Requires bed to be made - occupied/unoccupied
3. Requires to be washed and/or dressed
4. Oral hygiene, hair, etc.
5. Bathing in bed
6. Requires to be lifted or moved
7. Requires bedpan/sanichair/incontinent
8. Pressure areas
9. Requires feeding
10. Requires all personal services - eg. cigarettes, letter-writing, etc.

Category B: Bedfast/chairfast/partially helpless
(dependent on nursing staff for movement from bed to chair; will require assistance with toilet facilities; may require some assistance with feeding and personal services)

1. Confined to bed/chair
2. Requires bed made - occupied/unoccupied
3. Requires to be washed or assisted and/or dressed
4. May require assistance with oral hygiene, etc.
5. Bathing in bed
6. Requires some lifting
7. Requires bedpan/sanichair
8. Pressure areas
9. Can feed self - with/without assistance
10. Assistance with some personal services

Category C: Bedfast/chairfast but not helpless
(bedfast/dependent on nursing staff for movement from bed to chair. Capable of washing (either in bed/taken to wash basin); feeding self and all personal services.

1. Confined to bed/chair
2. Requires bed made - either occupied/unoccupied
3. No assistance required with washing
4. No assistance required with oral hygiene, etc.
5. Bathing in bed/bathroom assisted
6. Requires some lifting
7. Requires bedpan/sanichair
8. Pressure areas
9. Can feed self
10. Capable of all personal services

Category D: Semi-ambulant

(patient up and moving about part of day. May require assistance getting out of bed. Capable of all other services)

1. Only partially confined to bed
2. Requires bed made unoccupied
3. No assistance required with washing
4. No assistance required with oral hygiene, etc.
5. May require assistance with bathing
6. May require some assistance in getting out of bed
7. Up for toilet purposes
8. Pressure areas minimum
9. Can feed self
10. Capable of all personal services

Category E: Totally ambulant

(patient up and about the ward all day)

1. Ambulant
2. Bed made when unoccupied
3. Capable of all other services

Reference: Appendix C: Classification of patients, from Scottish Health Service Studies, Nursing workload per patient as a basis for staffing, (Study 9). Scottish Home and Health Department. 1969.

Note: For the purposes of the current study, patients whose requirements could be said to fall into Category D (semi-ambulant) or Category E (totally ambulant) were regarded as being of low dependency.

APPENDIX IX

DETAILS OF SAMPLE

1. Reason for admission

Diagnostic category	n.	%
Cardiac	22	44
Respiratory	12	24
Gastro-intestinal	7	14
Vascular	5	10
Nervous	2	4
Endocrine	1	2
Renal	1	2

2. Previous experience as in-patient

Number of previous admissions	n.	%
0	4	8
1	6	12
2	15	30
3	9	18
4 or more	16	32

3. Length of current stay

Number of nights in ward prior to inclusion in study	n.	%
3	12	24
4 - 7	29	58
8 - 14	4	8
15 - 21	3	6
22 or more	2	4

4. Age of sample

Age (years)	n.	%
20 - 29	4	8
30 - 39	7	14
40 - 49	11	22
50 - 59	7	14
60 - 69	14	28
70 - 79	5	10
80 and over	2	4

5. Marital status

Status	n.	%
Single	6	12
Married	32	64
Widowed	12	24

6. Dependency classification

Category	Females	Males	Total	
	n.	n.	n.	%
D	7	5	12	24
E	18	20	38	72

APPENDIX X

INCIDENCE OF DIFFICULTY IN GETTING TO SLEEP IN HOSPITAL

1. In terms of those experiencing difficulty

(N=24)

Number of nights when difficulty was experienced	Patients who experienced difficulty		Total number of nights
	n.	%	n.
1	14	58	14
2	7	29	14
3	3	13	9
	24	100	37

2. In terms of total sample

(N=50)

Number of nights when difficulty was experienced	Patients who experienced difficulty		Total number of nights
	n.	%	n.
1	14	28	14
2	7	14	14
3	3	6	9
	24	48	37

APPENDIX XI

SUMMARY OF SLEEP-DISTURBING FACTORS

Categories of sleep-disturbing factors

	n.	%
Physical factors	65	51
Environmental factors	25	20
Psychological factors	4	3
Unidentified factors	33	26
	127	100

1. Physical sleep-disturbing factors

	n.	% of physical factors
Pain	15	23
Dyspnoea/cough	17	26
Other discomfort	33	51
	65	100

2. Environmental sleep-disturbing factors

	n.	% of environmental factors
Noise: other patients	10	40
new admissions	4	16
nurses with other patients	4	16
nurses walking about ward	3	12
Ward temperature too high	2	8
External factors (thunder storm)	2	8
	25	100

3. Psychological sleep-disturbing factors

	n.	% of psychological factors
Worried about impending investigations	1	25
Other worries	3	75
	4	100

APPENDIX XII

MORNING WAKING IN HOSPITAL

1. Time of waking (N=150)

	n.	% of mornings
Before 5.00 a.m.	9	6
5.00 a.m. - 5.59 a.m.	63	42
6.00 a.m. - 6.59 a.m.	78	52

2. Cause of waking (N=150)

	n.	% of mornings
Natural	61	41
Other	89	59

3. Cause of waking when not natural (N=89)

	n.	% of mornings
Physical	10	11
Environmental	33	37
Social	44	49
Psychological	2	2

4. Environmental causes of waking (N=33)

	n.	% of mornings
Noise - nursing staff	17	52
Main lights switched on	10	30
Noise - patients calling	6	18

(On 82% (n27) of occasions when environmental factors were said to have caused waking, the patients concerned said they would have preferred to have slept on).

5. Social causes of waking (N=44)

	n.	% of mornings
For a cup of tea	40	91
For treatment/observations	4	9

(On 70% (n31) of occasions when social factors were said to have caused waking, the patients concerned said they would have preferred to have slept on).

APPENDIX XIII

SATISFACTION WITH SLEEP IN HOSPITAL

1. Satisfied with sleep

Number of nights	% of patients	Total number of nights
3	40	60
2	46	46
1	12	6
		n112

2. Dissatisfied with sleep

Number of nights	% of patients	Total number of nights
1	46	23
2	12	12
3	2	6
		n38

3. Reasons cited for dissatisfaction with sleep (N=38)

	n.	%
Difficulty getting to sleep	1	3
Difficulty getting to sleep and waking too often	6	16
Waking too often during the night	15	39
Waking during night and difficulty getting back to sleep	15	39
Simply needed longer time to sleep	1	3

APPENDIX XIV

COMPARISON OF SLEEP - HOME vs HOSPITAL

1. Satisfactory nights (N=112)

	More or longer		Fewer or shorter		About the same	
	n.	%	n.	%	n.	%
Time to get to sleep	47	42	12	11	53	47
Number of awakenings	32	29	42	38	38	34
Time awake during night	48*	43	30	27	34	31
Number of hours sleep	24	21	69	62	19	17

* 31% (n15) longer than 1 hour

2. Dissatisfied nights (N=38)

	More or longer		Fewer or shorter		About the same	
	n.	%	n.	%	n.	%
Time to get to sleep	9	24	14	37	15	39
Number of awakenings	17	45	6*	16	15	39
Time awake during night	35**	92	1	3	2	5
Number of hours sleep	1***	3	34	89	3***	8

* longer time awake during the night

** 83% (n29) longer than 1 hour

*** longer time to get to sleep initially

APPENDIX XV

INTERACTIONS PRIOR TO PATIENTS SETTLING FOR THE NIGHT

1. Initiation of interactions (N=480)

	n.	%
Initiated by nurse	414	86
Initiated by patient	66	14

2. Nurse-initiated interactions (N=414)

Category	n	%
Task-initiated	342	83
Incidental	67	16
Illness-related	5	1

3. Task-initiated interactions initiated by nurses (N=342)

Subsequent category	n.	%
Task-related	256	75
Incidental	72	21
Illness-related/worries	14	4

4. Incidental interactions initiated by nurses (N=67)

Subsequent category	n.	%
Incidental	54	81
Task-related	8	12
Illness-related	5	7

5. Illness-related interactions initiated by nurses (N=5)

Subsequent category	n.	%
Incidental	2	40
Illness-related	2	40
Task-related	1	20

6. Patient-initiated interactions (N=66)

Category	n.	%
Incidental	48	73
Requests for nursing services	18	27

7. Duration of interactions (N=480)

	n.	%
Less than 2 minutes	455	95
2.00 minutes - 4.59 minutes	20	4
5 minutes or longer	5	1

8. Summary of nursing tasks performed prior to patients settling for the night (N=369)

Nursing task	n.	%
Drug administration	132	36
Physiological observations	97	26
Supplying warm drinks	71	19
Tidying bed, including making patient comfortable	35	10
Tidying patient's locker and surrounding area	26	7
Assisting patient with excretory functions	8	2

APPENDIX XVI

INTERACTIONS OCCURRING AFTER PATIENTS HAD SETTLED BUT PRIOR TO HAVING SLEPT

1. Initiation of interactions (N=18)

	n.	%
Initiated by nurse	15	83
Initiated by patient	3	17

2. Nurse-initiated interactions (N=15)

Category	n.	%
Request for information	12	80
Offer of service (task-initiated)	3	20

3. Time interval between patients settling for the night and initiation of interactions by nurses (N=15)

Time (minutes)	n.	%
30 - 44	12	80
45 - 59	0	0
60 - 74	1	7
75 - 89	1	7
90 or more	1	7

4. Nursing tasks related to offers of service (N=3)

Task	n.	%
Supplying drinks (cup of tea)	3	100

5. Duration of nurse-initiated interactions (N=15)

Time	n.	%
Less than 1 minute	12	80
More than 1 minute but less than 2 minutes	3	20

6. Patient-initiated interactions (N=3)

Category	n.	%
Requests for nursing services (subsequently task-related)	3	100

7. Nursing tasks related to requests for nursing services (N=3)

Task	n.	%
Supplying drinks (cups of tea)	2	67
Drug administration	1	33

8. Time interval between patients settling for the night and calling for nursing service (N=3)

Time (minutes)	n.	%
30 - 44	2	67
45 - 59	1	33

9. Duration of patient-initiated interactions (N=3)

Time	n.	%
Less than 1 minute	3	100

APPENDIX XVII

INTERACTIONS OCCURRING DURING THE NIGHT

1. Initiation of interactions (N=162)

	n.	%
Initiated by nurse	128	79
Initiated by patient	34	21

2. Nurse-initiated interactions (N=128)

Category	n.	%
Task-initiated/task-related	86	67
Incidental	22	17
Request for information	15	12
Advice/instruction/ information to patient	5	4

3. Time patients were awake prior to nurses initiating interactions (N=128)

Time (minutes)	n.	%
Less than 30	109	85
30 - 59	17	13
60 - 89	2	2

4. Nursing tasks performed in relation to task-initiated/task-related interactions (N=86)

Task	n.	%
Supplying warm drinks (cup of tea)	32	37
Assisting patient with excretory functions	21	24
Tidying patient's bed, making patient comfortable	14	16
Offering cup of tea (offer declined)	11	13
Drug administration	6	7
Physiological observations	2	2

5. Duration of nurse-initiated interactions (N=128)

Time (minutes)	n.	%
Less than 1	63	49
1.00 - 1.59	59	46
2.00 - 4.59	6	5

6. Patient-initiated interactions (N=34)

Category	n.	%
Request for nursing service	29	85
Incidental	5	15

7. Nursing tasks related to requests for nursing services (N=29)

Task	n.	%
Drug administration	12	41
Supplying warm drinks (cup of tea)	8	28
Assisting with excretory functions	6	20
Tidying bed, making patient comfortable	2	7
Other (supervision of smoking)	1	3

8. Time patients were awake prior to requesting nursing service (N=29)

Time (minutes)	n.	%
Less than 30	23	79
30 - 59	5	17
60 - 89	1	3

9. Duration of patient-initiated interactions (N=34)

Time (minutes)	n.	%
Less than 1	26	76
1.00 - 1.59	5	15
2.00 - 4.59	2	6
5.00 - 9.59	1	3

APPENDIX XVIII

MORNING INTERACTIONS

1. Initiation of interactions (N=264)

	n.	%
Initiated by nurse	248	94
Initiated by patient	16	6

2. Nurse-initiated interactions (N=248)

Category	n.	%
Task-initiated	233	94
Incidental	12	5
Illness-related	3	1

3. 'First' morning interactions initiated by nurse (N=144)

Patient state	n.	%
Patient awake	98	68
Patient roused by nurse	46	32

4. Purpose of waking patients (N=46)

	n.	%
To offer cup of tea	38	83
Physiological observations	4	9
Drug administration	3	7
Specimen collection	2	1

5. Duration of morning interactions (N=264)

Time (minutes)	n.	%
Less than 2	261	99
2.00 - 4.59	3	1

APPENDIX XIX

SUMMARY OF ALL INTERACTIONS

(N=924)

1. Interactions initiated by nurse (N=805)

When initiated	n.	%
Prior to patient settling	414	51
After patient had settled but prior to having slept	15	2
During the night when patient wakened	128	16
In the morning	248	31

2. Nature of nurse-initiated interactions (N=805)

Category	n.	%
Task-initiated	664	82
Incidental	103	13
Request for information	27	3
Illness-related	6	1
Advice/instruction/ information	5	1

3. Interactions initiated by patient (N=119)

When initiated	n.	%
Prior to patient settling	66	55
After patient had settled but prior to having slept	3	3
During the night when patient wakened	34	29
In the morning	16	13

4. Nature of patient-initiated interactions (N=119)

Category	n.	%
Incidental	61	51
Request for service	58	49

5. Nature of all interactions (N=924)

Category	n.	%
Task-initiated	664	72
Incidental	164	18
Request for service	58	6
Request for information	27	3
Illness-related	6	0.5
Advice/instruction/ information	5	0.5

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